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PSYCHOLOGY AND SCIENTIFIC METHODS

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PSYCHOLOGY AND SCIENTIFIC METHODS

MORAL VALUATIONS AND ECONOMIC LAWS[1]

THE question to which I invite your attention this evening is the old question, What have moral valuations to do with economic laws? It is the question which called forth the scorn and contempt of Carlyle and the milder indignation of Ruskin for the classical economics and which fastened upon economics the epithet of "the dismal science." To-day, it seems that economics is somewhat less of a dismal science. We no longer hear, for example, that wages tend constantly towards the level of mere subsistence. It may even be admitted that labor shares in the benefits of industrial progress. Yet it seems that economic laws are still independent of moral valuations. Wages are still regulated by the law of supply and demand; and among the determining supplies and demands we may note the supply of labor or of capital, the demand for the product of labor, but we hear little or nothing of personal regard for the laborer, the employer, or the consumer. Again, we still hear that the issues of peace and war are determined by economic forces; against the pressure of economic forces it is assumed that reason and diplomacy will be wholly powerless, and, on the other hand, that no international bitterness following a war could seriously interfere with the resumption of relations that were commercially profitable. It is evident, indeed, that economic laws operate in one world and moral valuations in quite another. Both moralists and economists talk about "value," and each has a conception of "good," or "goods." It seems, however, that goods and values, in the economic sense, are wholly irrelevant to goods or values in the moral sense, and that the community of names is more or less an accident of language.

Yet when we seek for the ultimate basis of value we learn that economic values and moral values have a common basis in human need and desire. The market value of wheat or of rubber and the moral value of justice or of love both rest finally upon the fact that somebody wants them; that is to say, they represent the more or less conscious needs of living persons. If we leave out this fact of conscious

[1] A lecture delivered at Princeton University, March 22, 1916.

and personal need, we seem to have no value, either moral or economic. Doubtless the steam-engine requires coal just as the body requires food; in this sense both requirements stand for objective facts; but neither fact becomes a fact of value until it becomes the conscious requirement of a person. But now it appears that the needs and requirements of persons are more or less a matter of judgment and choice; even the need for food is not wholly impersonal and objective. And it appears also that differences or conflicts in the needs of persons are capable, more or less, of voluntary mutual adjustment.

This places the economic law in a somewhat anomalous position. That the planets are determined in their relations to one another by natural law seems intelligible enough when we remember that the planets are without consciousness and without desire. It seems equally intelligible to suppose that the relations between conscious human beings will be determined by personal agreement. In the economic world, however, we are confronted with personal beings, actuated by conscious desire, whose actions affect one another; yet according to economic theory their relations are determined by laws quite as external and impersonal, quite as irrelevant to personal desire or choice, as the law of gravitation.

This states the question that I have in mind. How comes it that the relations of persons are determined by impersonal law? Why are the goods and values of the economic world so unrelated, as it seems, to moral goodness? And why is the economic man, not only in classical theory, but in actual life, so different from the more familiar human being? For all of these questions I shall propose a single answer, namely, that they are all a matter of the extent to which the relations in question are conscious or unconscious. All of the characteristic differences between the moral world and the economic world may be derived from the familiar distinction between personal acquaintance and business acquaintance, between intimate acquaintance and more distant acquaintance. The economic world is the world of distant acquaintance. Socially speaking, it is the relatively unconscious world, the world in which men are unconscious of their mutual relations; and this relative lack of self-consciousness accounts for the fact—so far as it is a fact—that economic relations are determined by natural law.

As a convenient approach to the subject I shall make use of the fact that, for a century and a half past, what has been perhaps the most prominent school of ethics, namely, the utilitarian school, has been also a school of economists. It strikes me as significant of a close relation between moral and economic values that several of the more conspicuous of the utilitarians, such as Adam Smith, the two Mills, and Henry Sidgwick, were both moralists and economists.

According to the utilitarian theory, the morality of an act is determined by calculations of pleasure or happiness; and when we analyze the logic and point of view of the pleasure-theory, we find, I think, that utilitarianism is essentially an economic theory of morals. Utilitarianism is morality treated as a process of exchange and distribution, in which moral value and moral obligation are determined by the methods of the market-place. When the utilitarian tells you that honesty is on the whole the best policy he means that it will bring you larger returns, in terms of pleasure, than dishonesty. When he rejects the principle of "honor for honor's sake," he applies to honor the same method of valuation that the economist applies to a painting or a bushel of wheat; that is to say, for the subjective value of honor as measured by this or that personal point of view he substitutes "value in exchange" as measured by an objective mathematical standard. And thus, in the utilitarian ethics "pleasure," or happiness, becomes a kind of moral currency, which plays the same part in moral valuation as the part played by money in the valuations of the market. Indeed, I think that we may carry the analogy further. If we ask what special sort of desire is represented more prominently by "pleasure" and by "money," we shall find that the utilitarian and the economic standards of goodness are one and the same; both imply that the chiefly important element of the good is material welfare.

And when the utilitarian formulates his answer to the question, "Who is my neighbor?" again he uses the economic method. In the utilitarian ethics personal obligation is a matter of *quid pro quo*.[2] The moral man, like the traditional economic man of the classical economics, is one who buys in the lowest market and sells in the highest; the neighbor to whom he owes the greater obligation is the neighbor from whom he may in turn expect the greater consideration. And it is still an economic point of view that guides the utilitarian when he lays down the formula of "the greatest happiness of the greatest number," in which "everybody is to count for one and nobody for more than one" as a rule for the administration of law and the distribution of public benefits. For in the last analysis the greatest happiness principle is a principle neither of distributive justice nor of humanitarian sympathy. It is simply a convenient rule for the distribution of goods based upon a typically economic estimate of what is conducive to the highest average of welfare or prosperity.

Now at first glance we are likely to condemn the utilitarian theory as an immoral theory of morals. Such is the traditional reply to utilitarianism; and certainly it seems offensive to our moral sense to

[2] Sidgwick to the contrary, I assume that utilitarianism is essentially egoistic. See my *Introductory Study of Ethics*, Chap. V.

suggest that calculation of private advantage is to determine our obligations to our fellows. Yet it seems just as certain that something must depend upon my relations to the fellow in question. Among the thousands of human beings with whom one comes into contact in the course of one's life, there are few with whom one can establish any very intimate degree of fellowship. Granting that, at certain crises, any human being may be in some sense my fellow, yet under ordinary conditions there is for each of us a broad distinction between those to whom we are more intimately related as friends and those who stand in the more distant relation of "the public." For any soundly reasoned ethical theory, it seems to me that this distinction must have an important significance. And if we consider only the more distant relations I think we must say that, in this field, the utilitarian theory of ethics is approximately valid. Here it seems that moral obligations and economic utilities lead to the same result.

Consider, for example, the moral situation of one whose business in life is to provide the community with shoes. From the economic point of view he is selling shoes, not "for his health," but for pecuniary profit. From this point of view he is the traditional economic man, whose chief purpose in life is to buy in the lowest market and sell in the highest. Now a good deal of idealistic contempt has been lavished upon the economic point of view; the "economic man," in fact, has been created chiefly to express idealistic disgust for the ethics of trade. Yet when we undertake to say what would be, under modern conditions, a more moral rule of trade than the rule of buying in the lowest market and selling in the highest, we find ourselves at once in difficulty. Let us assume—what I should not assume—that the sole justification of the shoe-merchant is the fulfilment of a social function; how shall he fulfil his function? Among his thousands of customers, who have the greater need of shoes? Who deserve to be served first? And who deserve the better qualities? From the point of view of the shoe-merchant there appears to be only one way of answering these questions: those who have the greater need are those who, other things equal, will make the greater sacrifices; in other words, those who will pay the higher price. Now it may be that the "other things" are never quite equal. It may even be true that, in terms of personal economy, those who pay the highest price make the least sacrifice. But your shoemaker knows nothing about this. Under strictly commercial conditions all that he knows, or can know, about any of his customers is the price that he will pay. Under these limitations of knowledge it seems that the economic rule of preference for the highest bidder is also the best available rule for distributing goods according to individual needs.

The situation is different when we come to the personal and pri-

vate relations; and it is the application of the utilitarian rule to these relations that makes it seem morally offensive. There is nothing especially repellent in the idea that economic pressure should determine the relations of men in business; for here it seems that pressure and resistance are, as a rule, a fair measure of moral desert. It seems distinctly immoral, however, that pressure should determine the obligations of man and wife or of parent and child. Again, it is more or less necessary that, in a business transaction, the buyer should take care of himself; in "a friendly transaction between gentlemen" we may expect that each may consider the point of view of the other as well as his own. This does not mean, however, that the personal relation is superior to considerations of *quid pro quo;* it does not mean, for example, that the idea of the family is repugnant to the distinction of individual obligations and individual rights. Rather may we say that all relations between individuals, however intimate, are in some sense relations of exchange. The difference lies in the fact that in the personal relation the things expected of one another are not easily reducible to quantitative calculation; and on the other hand calculation is neither a relevant nor an efficient method of adjusting the personal relation.

In the world at large, the world of distant acquaintance, each individual is, from the standpoint of each other, a unit, an impersonal "one"; or if any differences are recognized, they are the differences expressed in a single quantitative standard, such as the price that one will pay. Generally speaking, therefore, two individuals will count for twice one, and in a case of conflict the interests of the one will be sacrificed to the presumably greater interests of the two. In making arrangements affecting a multitude of individuals the rule will be that of "the greatest happiness of the greatest number" in which "everybody counts for one and nobody for more than one." The passenger-schedule of a railway or the bill of fare of a restaurant is made to accommodate the majority, as determined, not by personal consultation, but by statistical calculation, and the minority may suffer inconvenience or go without.

All of these conventions, however, are necessities of distant acquaintance. In the more intimate circle each individual is not a unit, but a person; not an abstract quantity, but a concrete and peculiar quality. You can not say here that two count for more than one; on the contrary, each is an invaluable one, and the sacrifice of one to another is to be regarded only as a necessity of the last resort. In the family relation it seems rather grotesque to talk about "the greatest happiness of the greatest number"; and I fancy that any one of us coming to his family table and finding there nothing that he could eat, would find rather cold comfort in the thought that a

calculation of the greatest happiness had shown that his tastes could profitably be ignored. The introduction of the greatest-happiness rule, or of any fixed rule, into the affairs of the family seems to imply that the family has been transformed into a sort of committee and that frank confidence has given place to formal reserve. Where the restaurateur can expect only to please the majority, the housewife faces the neater problem of pleasing all; on the other hand, she is not confined to the method of calculation. Calculation, whether in science or in common life, presupposes that we are dealing with the remote rather than the immediate. We measure the man for his coat when the coat is not at hand to try on: when we can fit the coat to the man the size of the coat becomes a matter of idle curiosity. Similarly, in adjusting our social relations we calculate only when we are denied the opportunity for personal consultation. Under these limitations calculation is doubtless an efficient method of adjustment; but it is a wasteful method, a method involving much sacrifice to all of those concerned, when compared with the possibilities of personal consultation. Under conditions of intimacy and confidence, with indefinite possibilities of question and answer, of suggestion and counter-suggestion, we may expect that sacrifice will be reduced to the minimum. The fact of intimate communication makes a difference, not only in the obligations between persons, but in the character of the practical result.

In this distinction of more intimate and more distant relations we have, it seems to me, the root of all the differences between the moral world and the economic world. A moral obligation between man and man is constituted, I should say, by the fact that they know one another. If in driving along a public road I know that the driver of an approaching vehicle will turn to the right and that he expects me to do the same, this knowledge is sufficient to constitute a moral obligation; if there is no agreement upon that point, and no possibility of agreement, then for each it becomes a question of who can more safely risk a collision. Consequently, moral obligations are of all degrees of comprehensiveness. We may talk of our duty to all mankind, but we all seem to recognize a greater extent of obligation towards our friends than towards more distant acquaintances, and a greater obligation to an acquaintance than to a total stranger. Even the good Samaritan must have felt a more compelling obligation had the man who fell among thieves been a fellow-Samaritan. But if we ask what makes one obligation more compelling than another, I think we are bound to come to this: that the extent of obligation is a question of the extent of personal understanding; in other words, it is a ques- of the number of points of contact. With the stranger whom I pass on the road I have, so to speak, but one point of contact. With my

intimate friends I have not only many points of contact, but each is related to all the others in what the lawyers call a "meeting of minds," or of personal points of view.

Now the economic relation, in spite of all its complexities, is very similar to the relation of two men who merely meet on the road. It is a relation in which men are strangers to one another at every point but one: what each knows of the other is simply what he will give in terms of money or what he will take in terms of a specified commodity. In a word, it is a relation of mutual ignorance rather than of mutual knowledge. To make my meaning clear I will ask you to picture to yourself a typically economic situation such as that presented by a great commercial city like New York. During a few hours of the day you will find some hundreds of thousands gathered in the down-town district and engaged in the business of exchange; during the night they are scattered in their homes up-town or outside of the city, in New York, New Jersey, or Connecticut. If you ask what they are exchanging, your first answer may be, useful commodities for personal consumption. But in every act of exchange the commodities offered on one side are simply dollars and those on the other side are offered only in exchange for dollars. And the nearer we come to a completely organized market, such as we find on the Stock Exchange, or the grain or cotton exchange, the less interest we seem to find in useful commodities, grain, cotton, or railways, as such, and the more it seems to be a matter of exchanging certificates or receipts, for anything you please, provided only they are readily convertible into dollars. What we find, then, is a vast concourse of supplies and demands, all expressed in terms of a single abstract, quantitative standard. And in the business district this is, generally speaking, all any man knows of his neighbor, namely, what he will give or what he will take.

If, therefore, we take a bird's-eye view of the business district and consider the business district alone, what we find is a city by itself composed exclusively of "economic men," in whom all the infinitely various needs, bodily and spiritual, embodied in what we call human nature, have been replaced by the single need of buying in the lowest market and selling in the highest. It will not do to say that the "economic man" is a merely grotesque abstraction. Modern economic conditions, by taking the business out of the home, have incorporated him, with all his grotesqueness, into the world of fact. When a man leaves his home for his office he enters a different world, and to meet the conditions of that world he becomes for the time being a different man. Though generous and humane in his private life, in business he is bound to be more or less hard and unforgiving. A man of many tastes at home, in his business he must devote him-

self to the cultivation of one taste. Doubtless we may find many evidences of humanity in the commercial world, but humanity is at best only a by-product of commerce. The purpose of men in the market is not to cultivate friendship, but to make money.

Yet the economist will tell us that no one is really aiming at money for the sake of money itself. Money is but the representative of the more comprehensive conception of wealth; and wealth—well, wealth is what money will buy. Looking at the things that are exchanged for money, we are very likely to think that wealth consists of commodities that are distinctively tangible. But if we analyze the desires represented by wealth we shall see that wealth is as various as there are men who desire it. To one man wealth means a luxurious home; to another, social position; to a third, the education of his children; while a fourth man thinks that his money is well spent if it brings him nothing but freedom and leisure. And therefore if we seek the real forces determining the economic situation—the "ultimate economic forces"—we shall find ourselves leaving the business district and studying our business men in their distant homes. For, in the last analysis, it seems that, under the disguise of economic men, the market is really a concourse of persons. And the competing supplies and demands, though defined in abstractly quantitative terms, are really as many and as concretely personal as there are individuals engaged in the market. But this only points once more to my thesis, namely, that the economic relation is a relatively unconscious relation. For under strict market conditions these personal reasons never come to speaking terms. Intercourse is confined to "What will you give?" and "What will you take?" and the reason why is left unspoken. Under these conditions the relations of men in the market are like those of men walking in the dark, where each, deprived of the fuller and more immediate knowledge of clear vision, is compelled to depend, in adjusting his movements to those of his neighbor, upon a more or less imperfect inference from what he can hear. And I think we are bound to assume that, if the personal reasons could be brought into consideration, the resultant situation would be greatly altered.

Now at first glance this view of the economic situation may seem monstrously false. For it seems that, in modern society, in times of peace at least, the economic world represents the point of most complete organization. The economic process may be regarded as the social process reduced to a scientific basis by organized observation and statistical calculation. Indeed, it may be said that a comprehensive representation of all the possible bids and offers is a necessary condition for an organized market and for a stable and objective market-price. All of this may be true, yet without prejudice to what

has been said. It only raises the broader question regarding the status of scientific knowledge. For I shall admit that the knowledge which men have of their neighbors on the market is a typical case of scientific knowledge, and, indeed, an instructive case. Scientific knowledge, however, is knowledge by simplification; in other words, it stands for relative ignorance. Scientific method is irrelevant to the familiar and concrete; as a rule we reserve it for the more remote and inscrutable. And there it controls its object by substituting for the object a simpler and more intelligible model. For the concrete properties of a substance the chemist substitutes an atomic structure, for the varieties of color the physicist substitutes rates of vibration of the ether; of the relations between color qualities as such the physicist can tell you nothing. In like fashion a scientific market substitutes for concretely personal needs demands and supplies expressed in terms of dollars and cents. And if you reply that for practical purposes it makes no difference whether you deal with the substitutes or with the originals, then I shall say that, though this be true of colors, it is not true of persons. The relative stability of market prices is due to the fact that the personal equations are kept out of the market. The equilibrium of supply and demand presupposes that bids and offers are stated as facts and not as preliminaries to negotiation. Where personal communication is established prices have ceased to be objective.[3]

[3] To illustrate my point I will invite the reader to consider the assumption that is fundamental to the scientific market and the objective price; and to show that this assumption is not peculiar to an ultra-scientific view I will refer him to a decidedly humanistic treatise on economics, namely, the *Economic Principles* of my colleague, Professor Frank A. Fetter. In Chapter 7, on "Principles of Price," it is assumed that the market is made up of buyers and sellers each of whom is ready to buy or sell a given maximum or minimum quantity of the assumed commodity at a given price, determined by him before entering the market. In the illustrative scheme the prices both of buyers and of sellers are assumed to range from 1 to 14, and the resultant price, representing the final equilibrium of supplies and demands, is 9. Now, this assumption, obviously implied in the conception of objective price, is never quite true of any actual market or of any living buyer or seller. Even in organized commerce, where it is most nearly true, no buyer or seller cares to commit himself finally until he sees how the market is going. The purchaser in private life rarely has his price set; but if, having decided to pay only $5 for a pair of shoes, I find none that suit me at that price, it does not follow either that I shall withdraw from the market or that I shall submit to the $5 shoes; the more probable result will be to reopen the question (involving, perhaps, my whole personal budget) of what I can afford. Still less can we speak of a ready-made price, fixed in advance, in a case of barter, or where the conditions permit of "higgling." One need only recall the familiar dialogue in which "What will you give?" is answered by "Well, what will you take?" Under conditions of free communication no man who expects to act intelligently can say finally what he will do, or what he can do, until he has consulted the other party—just because, if for no

If we are to grasp the true peculiarity of the economic situation we must remember that, while "the economic motive," so called, of bodily sustenance is as old as life itself, and thus not an exclusively human motive, all that apparatus of exchange which constitutes what we call an economic world and supplies the material for a science of economics, is distinctively a feature of *modern* commerce. And at the same time we must remember that the science of economics is distinctively a modern science. I believe that Aristotle is sometimes regarded as the first economist; but all that Aristotle has to tell us about commerce is that commerce is contemptible. Economics as a science is born, not only at the same time, but in the same land, as modern machinery and the modern system of entrepreneur industry. In brief, the economic world, as we understand it, is peculiarly the product of commerce on a large scale; it is the special creation of modern machinery and modern apparatus of communication.

Now, strangely enough, one of the results of improved means of communication is to hold apart those who, we should say, would be most concerned to meet. It is true that, in the sense that the products of one land are consumed in distant lands, modern commerce brings more distant persons into some sort of economic relation, and thus creates larger economic wholes; but in doing this modern commerce also separates the ultimate producer and the ultimate consumer, the ultimate borrower and the ultimate lender, and even the ultimate employer and the ultimate laborer, by the interposition of an indefinite number of middlemen. Thus it results from the very magnitude of the situation that the personal needs which constitute the ultimate forces of the market are kept largely in ignorance of one another. Each person entering the market becomes blankly a term in a scientific system of exchange, and each is confronted, not by other persons, who as persons may be open to negotiation, but by the blank facts of the system.

I feel it necessary to emphasize this large-scale feature of the economic process because, in text-books of economics, we may note a tendency to explain the economic world by reference to a miniature world of primitive barter in which commodities are exchanged, not

other reason, the other party is in a similar position. The prices representing the two parties are not constants, but mutually dependent variables; the market-price is reached, not through the composition of initially given forces, but through a repeated interchange of tentative proposals—not by a mechanical process, but by a logical process; and the final outcome is not an "equilibrium" of "forces," but an agreement of minds. *The assumption of a ready-made price would be true only for one situation; namely, where the market is composed, not of principals, but of brokers, or agents, executing fixed orders. And my point is that it is the psychological equivalent of this situation that underlies the scientific market and the objective price.*

for money, but for commodities. Now, the process of barter implies a logical and psychological situation quite remote from that of the world of economic law. When men meet face to face for barter a rejected bid invites an alternative offer. If I can not get your horse for my cows, perhaps I can get it for something else; or if you will not let me have the horse, it is possible that, if I explain why I need the horse, you will find it worth while to further my ends in some other way. Through this introduction of alternatives the opportunity is opened on both sides for personal choice; and in the presence of personal choice the blind forces of supply and demand are modified in the direction of personal agreement. This means, again, that the conditions are created for a transaction more profitable from the point of view of both parties than any simple market transaction; each of the parties may not only save money, but satisfy more completely his personal need. Nay, it is even possible, if the process of negotiation be carried far enough, that each may get all that he originally demanded, all that for which he would have paid a price upon the market, without any sacrifice whatever; and what began as a blank opposition of supply and demand may end in a perfect harmony of interests. In brief, the relation of men in barter is, relatively speaking, a moral relation rather than an economic relation.

Compare this transaction with the typical transaction on the market. Under market conditions, each party to an exchange is confronted with a hard fact, in the form of a money-price, which he may either accept or reject. Under the conditions of the market it is useless to propose an alternative basis of exchange. And in the fully developed market it is superfluous to suggest even a lower or a higher price. For each one knows that the price offered or demanded is determined, not by the will of the other, but by the sum-total of demands and supplies constituting the market. Thus each is confronted by a body of opaque fact, for which no one is personally responsible, and which can not be attributed to any social agreement. And between any two parties to the market this body of fact stands like an ocean or a range of mountains, forbidding communication except under definitely limited conditions. Each, in a word, faces precisely the same situation as when he is confronted by the impersonal facts and laws of nature.

Such is the meaning of economic law. If we think of the economic process in terms of social process, then we shall say that the element of law, as constraining our will, is the correlate of our unconsciousness of the process. As a matter of law, the economic process is a feature, not of the world of social consciousness, but of the larger world of social unconsciousness. And if it be objected that economic laws stand for positive forces, then I shall reply that

all "forces" as such—as distinct from motives or persons—are unconscious entities; and further that it is precisely this unconsciousness that distinguishes all of the impersonal and inevitable "laws of nature." It is important to remember that the meaning of every term is determined by reference to an opposite. Now the opposite of natural law is personal choice or agreement; when we say that action is determined by law we mean at the same time that it is *not* determined by choice. And this is what we mean when we cite, as the most striking and distinctive expression of natural law, the course of the planets around the sun; we mean that of all the bodies, conscious or unconscious, within our experience, the planets are the typically unconscious. If, by an effort of imagination, we could conceive the planets to be aware of their movements and of their relations to one another, we could no longer conceive them to move according to impersonal natural law. Now, in the social and economic world we have a group of bodies whose movements are partly conscious and partly unconscious. So far as they move consciously, they are moral agents; so far as they move unconsciously they are physical facts, like any other physical facts; and it is the bare physical fact that lies at the basis of economic law.

Thus, if we ask whose taste and judgment are expressed in most of the things that we use and wear, our reply must be that to a large extent they express nobody's taste and nobody's judgment. An economist might tell us that the selection of what is to be bought and sold upon the market is determined by economic law. But this means only that the maker and the user are more or less out of communication; and in the absence of communication the selection is determined by physical fact. When I buy a pair of shoes, for example, I take, not what I want, but the best that I can get in view of a given supply; under modern conditions it seems futile to specify what I should prefer. But the supply of shoes is determined, on the side of the maker, by a statistical record of what I and the other purchasers actually take. Each of the two parties deals, then, with a bare physical fact—the fact that certain goods are taken, or that certain goods are found in the supply. The economic process of selection, so called, is hardly more of a mental process than the processes of an adding-machine or a cash-register. Again, the Minnesota farmer, rejoicing in an unusually large crop of wheat, is disgusted to learn that prices are low; perhaps the cause of low prices is to be found in similarly large crops in Russia or Argentina. But doubtless the wheat-growers of Russia and Argentina are similarly disgusted. Each party to the market finds his ambitions thwarted by economic law. But in the last analysis the opposing force is a physical fact, the fact, namely, of a large supply of wheat in the

market; on the other hand, it is not difficult to see that this physical fact is due largely to the lack of communication between wheat-growing centers.

And thus, in the final analysis, it appears that economic law is a case of unconscious physical causation; economic laws are statements, not of what men plan, nor even of what they desire, to do, but of what actually happens as the result of their actions. Now it is clear enough that in reaching this result we have ceased to describe any actual economic situation. But this only serves to establish my main conclusion, namely, that no actual economic situation, no situation which implies the participation of living human beings, can be dominated exclusively by economic law. Economic laws and moral obligations form the limiting terms in a graduated series between which lie all the relations of men in concrete life. No human being is quite so unconscious of the effects produced by his actions, or of the source of the effects produced upon himself by the action of others, as the members of the planetary system; on the other hand, no two human beings ever reach the stage of absolute mutual understanding. Every human action, and every social relation, is partly conscious and partly unconscious; and thus every social relation is determined partly by choice and agreement and partly by blind cause and effect. But in the march of life we become conscious of relations that were formerly unconscious. And in the measure that this is true economic law is transformed in the direction of personal agreement. Nothing illustrates this more clearly than the *consciousness* of competition. When we rely upon the competition of producers to keep prices down we are assuming that it will be blind competition. If we suppose the several competitors to become clearly conscious of one another, we are bound to suppose that they will combine for mutual advantage. Prices will then continue to be fixed by supply and demand, but instead of saying that human actions are determined by supply and demand, we must now begin to say that supply and demand are determined by the will of men. And though the mutual understanding of producers has left the consumers out of the question, it will still be true that, within the circle of producers, the consciousness of one another has instituted a moral obligation.

Accordingly, in any actual economic process the economic relation is being constantly transformed in the direction of moral obligation by the simple fact of consciousness of the relation. At the same time the consciousness of the relation becomes an important factor in determining the economic situation. Yet among the factors recorded as determining an economic relation it seems that consciousness of the relation is commonly the last factor noticed. To illustrate the consequences of this omission, I will ask you to consider for a mo-

ment the important problem of rates of freight. Among economists it seems to be generally agreed that rates of freight should be determined by the principle of "what the traffic will bear"; in other words, the price of transportation should be determined, not by the cost of transportation, but by its utility to the purchaser. Now, we may freely admit that, from the point of view of the railway, this is a legitimate principle—indeed, the only available principle—as long as "the traffic" consists of a vaguely inarticulate and uncomprehending "public" which is known to the railway official only as a statistical body of fact; and that an unconscious traffic is presupposed in this principle, is revealed by the fact that one of the reasons for laying a high rate upon goods that are relatively light and relatively costly is the assumption that it will not be felt.

Such was the situation in the United States, say, thirty or more years ago. Meanwhile, the traffic has become conscious of what it is bearing, and through the several railway commissions it has begun to give articulate expression to what it is willing to bear. It seems rather naïve to ask a fully awakened traffic to admire the principle of what the traffic can bear. From the point of view of a united traffic the more interesting question is, What can the railways bear? This means that a new element has been introduced into the determination of price, namely, the rejected factor of cost. To the buyer of transportation cost stands in the same relation as utility to the seller; that is to say, it marks the lower limit of price beyond which no agreement will be possible. And when you are confronted with a buyer who insists upon reckoning the cost, and whose insistence is supported by the logic of his position, it is vain to urge that in economic theory prices are never determined by cost of production. In any face to face adjustment, or in any judicial adjustment, both cost and utility are bound to be considered and each will have a voice in the resulting adjustment.

But any face to face adjustment is bound also to move in the direction of a moral adjustment. A negotiation conducted on a purely economic basis implies a situation like a game of cards, where each player conceals his hand; the seller remaining silent with regard to cost, the buyer with regard to utility.[4] But when the game is played

[4] This figure of the game is often applied to the economic situation. In a hasty view it lends itself readily to the idea that the game is determined by the deal of the cards, and that perfectly intelligent players would decide the outcome simply by displaying their hands. Let it be noted, however, that such perfect intelligence—which is possible, if ever, only for a strictly limited field of conditions, like a game of cards—implies a perfect mutual understanding of personal points of view. In the actual game, the play of a given player is determined, not by the card that his opponent plays (since this is uncertain until the play has been made), but by the card that he expects him to play. In the

face to face we reach sooner or later a point where concealment of the cards is no longer worth while. Supply and demand have reached a deadlock; the economic forces have been fully measured in terms of one another; the question is now what use you will make of them and what consideration you expect. At this point the economic problem becomes distinctly a moral problem. Considerations of what the traffic will bear as against the cost of transportation are more or less superseded by the introduction of the conception of a "fair" rate, or a "fair" return upon investment, or "fair" conditions for getting the return. In the freight-rate controversy this point appears to have been reached. In the message to the public which now very commonly occupies the cover-page of the time-table we seem to find nothing about what the traffic will bear, much about the increased cost of operation, much about the service rendered to the public, and, in general, an appeal not to economic force, but to justice and fair play. The appeal to justice doubtless complicates the question—the calculation of economic forces is always simpler; nor can justice be defined apart from the disposition of economic forces. It means, however, that a sense of mutual obligation and mutual advantage is supplanting the merely blind operation of economic law.

This leads me to a concluding observation. Paradoxical as it may seem, I should say that the chief moralizing and humanizing force in the economic process is the study of economics; and not the least effective, in this respect, is that brand of economics which stands for the absoluteness of economic law. Here, indeed, we face the paradox common to all of the so-called sciences of human life. The sciences of humanity have a way of leaving out of their calculation the effect of science upon humanity. The classical economics appears to presuppose that nothing will be substantially altered by the science of economics. Now, when we discover a law relating to the solar system, the solar system, blissfully unconscious of the law, moves in the same way as before; but when we discover a law of human nature, we are, by the very fact of discovery, placed in a position to say whether the law is to continue to prevail; in brief, the dominion of law is dissolved by the consciousness of law. The most striking illustration of this is the Malthusian law of population. Speaking broadly, we may say that up to the time of the Malthusian formulation the pressure of population upon subsistence was a universal law.

economic world bids and offers are determined, not by the *facts* of supply and demand, but by the *forecasts* of supply and demand; and forecasts imply a certain comprehension of the disposition and point of view of the opposing party. Thus every economic process, so far as it implies a relation between human beings, implies some degree of moral calculation.

As soon as the law was formulated, and precisely as the result of being formulated, the law began to lose its force; and now we face a common complaint that population refuses to press upon subsistence. Again, it seems clear that emphasis upon the law of diminishing returns has been the chiefly important factor in checking, at least, the rate of diminution. And therefore when we are confronted with an economic determinism which tells us that human life and social conditions are under the absolute dominion of economic law, it will be sufficient to point to the economist who reveals the law, and who by his organized investigation of economic fact enables us more or less to know where we stand with relation to one another. Through his revelation of law and of fact, it is precisely he who plays the leading part in transforming the world of economic determinism into a world of moral obligation.

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THE METHOD OF ABSOLUTE POSIT

A UNIVERSE of pure reason loses none of its fascination for daring minds as the ages of philosophy roll by. Appalled by nothing short of contradiction, Professor Cassius J. Keyser has written a book on *The Human Worth of Rigorous Thinking* which is another brief for absolute abstraction. Unlike briefs in general it is interesting reading: illuminating, stimulating, delightful. Is it also convincing, or more nearly convincing than countless previous attempts to think reality without content of sense perception?

The goal of Professor Keyser's thinking is a conceptual universe without concrete alloy, and harmonious throughout. Its attributes are finite and infinite. Its amplitudes are space and hyper-space. Professor Keyser is persuaded that this complex is intellectually possible, as involving no inherent contradiction. Not all his readers can share his confidence.

His account of space n-dimensional in respect of independent variables other than points, but not more than three-dimensional in respect of points, is a thing perfect of its kind: it is clear. But the achievement of mere clarity in a domain so restricted by no means satisfies Professor Keyser. An n-dimensional space that, after all, is only complex space, resolvable into our commonsensible four point space, is for him wholly inadequate. Its independent variables turn out to be only categorical repetends, as interminable as the string of threes that you get when you divide one hundred by three. A hyper-space deserving to be so called must be more than four

point space in a looking-glass, or, if a dynamic figure be preferred, it must be more than familiar space chasing its tail around a sphere or tying itself in knots. It must lie "outside" the rover's bounds of "fore" and "aft," "starboard" and "port," "aloft" and "below."

It can not be discovered, and in propriety it should not be if it could be, because discovery rests under suspicion, as possibly sprung from a consorting of Thought with Imagination. It must be created, and this is a way to create it; not the only way, Professor Keyser says, but the one of his choice (p. 117).

Posit two points and grant that these determine a line. It is space of one dimension. Outside of the line posit a point and suppose lines from it to all points of the given line. The plane so constituted is space of two dimensions. Outside of the plane posit a point and suppose lines from it to all points in the given plane. The solid so constituted is space of three dimenisons. By this time you have your cue: "Boldly pursue the opened course." "Outside the space last generated" posit a point and suppose it "joined by lines to all the points of the given space." You create hyper-space of five point reference, and the process "obviously admits of endless repetition."

Obviously; and if you spend your life in repeating it, attempting nothing else, no rational intelligence purged of sense can prove that your conduct is absurd. But Professor Keyser started out to do something else, and to do it in fact he must, without logical collisions, get his hyper-spaces into a conceptual universe!

Turn then to page 89. In italics Blaise Pascal's "brilliant *mot*" with a change or two of wording, but "without change of meaning" beams upon you: "Space is an infinite sphere whose center is everywhere and whose surface is nowhere." Professor Keyser is not aware, he says, that this "splendid literary gem," has been "regarded seriously as a scientific thesis." "It may, however," he contends, "be so regarded," and he undertakes to show "that this exquisite saying of Pascal expresses with mathematical precision the firm, albeit unconscious, conviction of the normally educated mind respecting the size and shape of the space of our universe." There is nothing doubtful about this language. "Mathematical precision" is a phrase of rigorous meaning. "Outside" is a word of rigorous logical meaning, of rigorous geometrical meaning. Where then, speaking (and thinking) rigorously, do we posit a point outside of an infinite sphere of four point space which has its center everywhere and its surface nowhere? "Obviously," thinking (and speaking) rigorously, *nowhere!*

Here, then, we arrive at an interesting bit of conceptual or logical, if not transcendental, truth. Infinite space of four point refer-

ence and hyper-space of more than four point reference can not coexist in the same rational universe. Their relationship is not a mere difficulty for imagination; it is a contradiction for conception. The fifth independent point of reference must be posited not only outside of four point space: it must be posited outside of pure reason.

Let us, however, not shrink from that possibility. The creators of hyper-space have been daring, but not daring enough. Arrived at Reason's ultimate d on the tangent of Aleph null, they have gasped and faltered. Knowing that from hyper-space no echo has fallen upon ears of sense and that into its depths the eye of imagination has not seen, they should boldly have faced the possibility that its dimensionality has not veritably been conceived by intellect. Then should the truth have made them free. Then should they have bethought themselves, with Euclid and Pascal, that a fourth independent point of space reference is a mathematical limit of relativity, beyond which one leaps off his tangent into the Absolute. A fifth independent point of space reference is Absolute Posit, not relative posit like each of the first four points. It is the creation not of Reason (the relation maker), but of that Pure Spirit which is the Will to Create, emancipated at last from conceptual necessity as from bondage to sense.

For those who are so free—so absolutely free—and can endlessly create by posit, the hyper-spaces are surely not too ample. Those of us who know in our hearts that we are not absolutely free, and that we never shall master the Method of Absolute Posit, must live as best we can within that infinite sphere which has its center everywhere and nowhere its surface—that is to say, within the modest realm of Science—the Universe of Relative Reality. In this realm Perception and Conception dwell in amity, creating by cooperation that modicum of knowledge whose credentials of verification are the joint and several attests of Perception and Conception, "checking up'" each other. In this realm our freedom is limited; we are under obligations and necessities; yet it is a goodly realm, and pleasant, if we are law abiding.

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REVIEWS AND ABSTRACTS OF LITERATURE

Die Grundlagen der Psychologie. THEODOR ZIEHEN. Leipsic and Berlin: B. G. Teubner. 1915. Vol. I., vi + 258; Vol. II., vi + 304.

This work constitutes Volumes XX. and XXI. of the valuable series on *Wissenschaft und Hypothese.* Volume I. deals with the epistemological foundations and presuppositions of psychology according to Ziehen; the concept of the soul; the mind-body relation; consciousness and the subconscious; and the relation of psychology to its neighboring sciences, especially logic, ethics, and esthetics.

Ziehen begins with the "given" which he calls the "*gignomene,*" and which is conceived as neither psychical nor material. The "*gignomene*" is analyzable into its elements (*reductionsbestandteile*), this analysis disclosing the psycho-physical distinction. The analysis of the reduction constituents reveals two series—the causal series and the parallel series. The problem of psychology consists in the examination of the parallel components.

Proceeding independently (*die authocthone Methode*) without reliance on physics or physiology, the structure of mental processes is built up on the basis of a single element—the sensation.

In Volume II., on *Fundamental Principles of Psychology,* the elaboration of the sensations into the higher forms of psychical process is presented. Here are two main sections. The first is on the technique and limits of the autochthonous methods—introspection, deduction, induction, genetic, and experimental procedures. The second section is on the main results yielded by these methods.

Through specific "functions" the sensations are transformed into ideas (*Vorstellungen*). The first of these transformations is given in "retention," and results in the memory image. This is to be distinguished from the sensation by its lack of sensory liveliness (*Lebhaftigkeit*). All further elaborations follow through three fundamental functions. These fundamental functions are not further analyzable nor can they be expressed in terms of each other. They are synthesis (*Zusammenfassung*), analysis (*Zerlegung*), and comparison (*beziehende Vergleichung*). All these elaboration processes are to be conceived as specific functions, after the analogy of specific sense energies. They determine the content and significance of the combination complex. The particular constituent items of the complex are determined not in the parallel series, but in the causally determined cortical activities.

The principal divisions or categories of the psychic are: (1) sensations; (2) integral, primary, individual, memory images; (3) extracted (*exzernierte*), primary, individual, memory images; (4) sec-

ondary memory images (abstracted from all spatial and qualitative changes); (5) the general concept; (6) the isolation concept; (7) the complex idea (*Komplexionsbegriffe*); (8) the combination concept; (9) ideas of relation; (10) feelings; (11) emotions; (12) judgments; (13) inferences; and (14) volitions.

Of these classes 2 to 9, along with 12, belong together as having a striking common characteristic—they are formed by the *Verknüpfung* of sensory components. Feelings and emotions are not coordinate with this great group—they constitute only secondary characteristics or properties of sensations or ideas and never occur independently (*Begleiterscheinungen*).

The conative experiences are treated in thoroughgoing non-voluntaristic fashion. They are described not as coordinate with sensation and its combinations, but as consisting of sensory elements and their accompanying affective qualities, in complex combination. Especially important in the make-up of these higher complexes are the secondary (*reperkutierte*) sensations accompanying expressive reactions.

The discussion, references, and comments indicate a lively interest in contemporary work, rich historical background, and widely ranging acquaintance with related sciences. The volumes are neatly prepared, with typography and make-up that are distinctly pleasing.

H. L. Hollingworth.

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Character and Temperament. Joseph Jastrow. New York and London: D. Appleton and Company. 1915. Pp. xviii + 596.

Writings about the concrete stuff of human nature as it lives, young and old, at work and at play, alone and with fellow men, in peace and in war, tend to be either rehearsals of Job, Solomon, and Æsop in a pedantic terminology, or to be researches with tests and correlational statistics. Professor Jastrow, of course, does not descend to the former. Because of impatience with the crudities and narrowness of the latter, he does not make much use of the detailed quantitative results of the psychology of sex, race nationality, occupational classes, and individuals.

His task is therefore hard. Psychology simply has not made any brilliant and impressive general discoveries about the common quality of humanity and the particular qualities of men, which have made and are making industry, business, science, and art. Also, much of the best that it has to offer in lieu of such has already been utilized with consummate literary skill in Santayana's *Life of Reason*. A critical organization of the more sweeping facts-that-might-be about the sources of human quality has to be vague and indecisive. It has to be speculative, or leave pressing questions without any

answers at all. If an ordinary person had read what Professor Jastrow has read, thought of the problems he has considered, and then related the results in a book, the book would have been rather bare and futile.

Character and Temperament is saved by the personal wisdom of its author, his fertility in discovering relations and principles of organization, and his extra-psychological knowledge of the world and men. The result is a book about the varieties of human nature that is scientific without being a dreary museum of quantitative evidence, and is intelligible without being superficial. The survey of character and temperament is probably not quite so readily intelligible to the layman as its author hopes. For use in classes or systematic reading courses, indeed, some time spent first on a selection of chapters from Galton and MacDougall would probably save time in the end and would certainly increase appreciation. The very ease and charm of Professor Jastrow's writing tempts one at times to go ahead without an exact fixation of the question he is answering and without a fully permanent impression of his answer in detail.

Whether *Character and Temperament* is an admirable book because of, or in spite of, its consistent refusal to use numbers instead of adjectives in describing human nature, is not for so prejudiced a reviewer to say. It seems to me that brevity and clearness would both gain from an elementary presentation of the distribution of variations along a linear scale, the overlapping of groups, the facts of correlated variability, the representation of an individual as an equation, and the exact numerical statement of the doctrines of "compensation," and of "types" of human nature. To describe the qualities of men without a single diagram seems too arbitrary a *tour de force*. However, all that can be done without quantitative argument and summaries of detailed and intricate evidence Professor Jastrow has done most skilfully and attractively.

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JOURNALS AND NEW BOOKS

JOURNAL OF EXPERIMENTAL PSYCHOLOGY, August, 1916. *The Faculty of Attention* (pp. 285–318): HERBERT WOODROW. – Measurements of the degree of attention were made on twelve subjects in the case of (1) simple reaction to touch, (2) to sound, (3) to light, and (4) choice reactions to an increase or decrease in the intensity of light. Degree of attention was measured by the

reciprocal of the prolongation in reaction time produced by the use of irregularly mixed preparatory intervals of widely differing lengths. The conclusion was reached that the mode of stimulus is a condition of attention. At moderate intensities of stimulus, a higher degree of attention is secured with touch as a stimulus than with sound, and a higher degree with sound than with light. The degree of attention is lower for the choice reactions. Marked individual differences were found to exist. *The Factors Affecting a Permanent Impression developed through Repetitions* (pp. 319–338): EDWARD K. STRONG, JR.—The writer used magazine advertisement as material presented and concluded: (1) A greater permanent impression is made (*i. e.*, 16 weeks after first presentation) when a firm advertises for four successive weeks and then stops, than if it advertises once a month during that period, or on four successive days, or advertises in four different magazines which are seen by a reader at the same time. (2) The impresson, after the first two days, apparently dies out gradually and in direct ratio to the total length of time which has elapsed. (3) It would seem that the greater the initial impression the less will be the added impression from successive repetitions. (4) It would also seem that the greater the initial impression the more does repetition within a few minutes affect the total impression as compared with repetition at longer intervals such as a day or longer. (5) As you increase the number of advertisements which are seen at any one time you decrease the effectiveness of the permanent impression from any one of them. (6) The value of space in advertising as affecting permanent impressions increases approximately as the square-root of the increase in area, or sometimes at a somewhat greater rate. (7) The same total amount of space is more effective when used in large amounts less often, than when used in small amounts, but more frequently. *Incidental Perception* (pp. 339–350): GARRY C. MYERS.—A study of incidental perception of time, size, and weight and of the comparisons between incidental and purposive perception of time and size. The writer concluded that on the average one minute of time was overestimated by about one half. Six and a quarter minutes was doubled in the estimation of the women and overestimated by about one half by the men. The estimation of a minute of filled time incidentally perceived was about the same as the estimation of empty time purposely perceived. Large individual differences were noted, the women being slightly more variable than the men. In estimating the sizes of the cent and half dollar, the coins were both underestimated and the estimation after incidental perception was almost as good as that after purposive perception. *The Correlation between the Sex of Observers and the Sex of Pictures Recognized* (pp. 351–

354): Yo SUGISAKI and WARNER BROWN.—Twenty photographs of college students were observed at the rate of one each half second and the test was made as soon as the 20 pictures could be shuffled up with 20 others. At one stting the first 10 of the 20 pictures were of men; at the next sitting the first 10 were of women. The subjects were three men and three women who were college students with slight psychological training, and 15 Japanese children attending schools in California under Japanese teachers. The data show that for college men and women of the same social status as the persons represented in the pictures it is easier for a subject to recognize a picture of one of his own sex than a picture of one of the opposite sex. The pictures of neither sex possess any intrinsic advantage over those of the other; men's pictures are as easy to remember as women's in spite of the greater variety of dress and coiffure in the latter. In the group of Japanese school children, who are of a different age and race from the persons represented in the pictures, the generalization does not hold. Women's pictures are more easily recognized by the girls, and also, though with many exceptions, by the boys. The boys were distinctly inferior to the girls. *On Certain Fluctuations in Cerebral Function in Aphasics* (pp. 355–364): SHEPHERD IVORY FRANZ.—Observations of reaction reversals, somewhat similar to those reported by Brown and Sherrington, have been made in diseases of the nervous system in man which, while not as anatomically well correlated as those on the monkey, have some importance in general consideration of the modes of cerebral activity. Whether or not the facts can be satisfactorily explained they point to a less exclusively machine-like view of the method of cerebral activities and in this way they lead to a better understanding of the activities of collections of cerebral cells which are commonly called centers.

Addams, Jane. The Long Road of Woman's Memory. New York: The Macmillan Company. 1916. Pp. xv + 168. $1.25.

Clarapède, Ed. Psychologie de l'enfant et Pedagogie experimentale. Geneve: Librairie Kundig. 1916. Pp. xii + 566. 8 Fr.

Dearborn, George Van Ness. How to Learn Easily: Practical Hints on Economical Study. Boston: Little, Brown, and Company. 1916. Pp. x + 227.

Holmes, S. J. Studies in Animal Behavior. Boston: Richard G. Badger. Toronto: The Copp, Clark Company, Limited. 1916. Pp. 266. $2.50.

NOTES AND NEWS

The Aristotelian Society held a meeting on November 6, 1916, Dr. H. Wildon Carr, President, in the chair. The President delivered the annual presidential address on "The Problem of Recognition." In the experience of recognition, he said, there is an element which may be named "againness." The problem of recognition is the nature and genesis of this element. There are two forms of recognition, in each of which we meet this element of "againness," an intelligent form and an instinctive form. These appear to be quite separate, but the cognitive fact is the same in each. In intelligent recognition we seem able to account for the "againness" by repetition, memory, and the judgment or perception of identity or similarity,—the mental process being an external act of comparison between a present datum of sense and a past datum. This, it was argued, is an illusion, for in reality the essential factor, repetition, is absent. Recognition implies prior cognition, but does not depend on the presence of a memory-image of the prior cognition. Recognition, it was held, is the conditionate and not the condition of learning by experience; and learning by experience is a primary not a secondary or dependent fact. In instinctive recognition, on the other hand, there can be no memory-image of the prior cognition because this prior cognition lies beyond the individual in the racial experience. Yet we have, in instinctive recognition, sentience, familiarity, and pre-awareness, all of which are mental characters. We have, therefore, to conceive the mental process or the mind as a continuous organization of experience. All past experience has not only contributed its quota to this organization, but is incorporated within it, giving to it, and receiving from it, its character and individuality. New sentient experience in entering this organization receives the impression of its stamp or mould, and this is the mark of the past on the present cognition which constitutes its recognition.

Dr. George Holmes Howison, professor of philosophy emeritus at the University of California, died on December 31, at the age of 82 years.

Dr. H. M. Sheffer has been appointed lecturer in philosophy at Harvard University and is giving the courses in logic formerly given by Professor Josiah Royce.

Dr. Hugo Münsterberg, professor of psychology and director of the psychological laboratory of Harvard University, died suddenly while lecturing to a class on December 16.

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RELATIVITY

THERE are two important questions to relativity: first, a physical question, "Do the laws of relativity hold true in the physical world?" and second, a mathematical question, "What are the laws of relativity?" The first of these will have to be decided by physical experiment, for at present it has not been decided nor is it likely to be for some time to come. The second was recently asked and answered by the Swiss scientist, Einstein,[1] without fear, though not without reproach.

Of the two questions the former is somewhat easier to discuss, and many a man is willing to discuss it with comparative indifference to the latter question. But it is the latter question which will concern us at present because a commentary on Einstein may be welcomed by some readers who like to know what things mean before deciding whether they are true, and because a study of relativity throws light on certain mathematical processes which are often obscured.

Mathematics may be defined as the science of arranging statements in consistent systems. For the sake of this consistency it is necessary that a mathematician should state as clearly as possible what his assumptions are. Then he must follow his assumptions to their logical conclusions, no matter where they may lead. But the mathematician is not a fatalist, and his procedure has the element of safety that if he does not like the conclusions, he is at liberty to change the assumptions.

His procedure is at the same time humble and arbitrary. It is humble because he calls an assumption an assumption, and arbitrary because he reserves the right to say to his reader, "Let us suppose that so-and-so is true"—although his reader may not wish to suppose that so-and-so is true at all, and, in fact, may be violently opposed to the assumption.

The most startling assumption of relativity is that the observed velocity of light is always constant, independent of the motion of the observer and the source of light. That is, light moves just as

[1] *Annalen der Physik*, 1905, p. 891.

fast with respect to us, no matter whether we are moving toward its source or away from it, and no matter how fast we move. There is a single proviso that we should move, as indeed we are accustomed to move, with a velocity less than that of light. In order to bring out the meaning of this physical assumption, let us first propose a mathematical problem, How would a man alter the present ways of measuring time and space if he decided arbitrarily to record the velocity of light as constant, independent of the motion of the observer? A study of this problem throws light not only on the assumptions of physics, but also on the processes of mathematics, for the question involves the larger question, What does it mean to solve an equation?

In early school life solving an equation means either finding an answer in the back of a book or satisfying an instructor that one has gone through a certain mechanical process whose logic, by the way, is apt to be questionable. If we solve an equation for x from this point of view we are supposed to be finding "the value of x." But there is no such thing as *the* value of x, since x may have any value. What we are really doing is finding, if possible, a value of x which will satisfy certain conditions. If the equation is $x-5=0$, we go about its solution properly as follows: "Perhaps there is a value of x which, minus 5, is equal to 0, and if so, let us find it." Many students of mathematics do not understand that this is what it means to solve an equation, insomuch that the poet and story-teller, Edgar Allen Poe, is thoroughly annoyed and writes in his Purloined Letter "I never yet encountered the mere mathematician . . . who did not clandestinely hold it as a point of his faith that x^2+px was absolutely and unconditionally equal to q. Say to one of these gentlemen by way of experiment, if you please, that you believe occasions occur when x^2+px is not altogether equal to q, and having made him understand what you mean, get out of his reach as speedily as convenient, for beyond doubt he will endeavor to knock you down."

The "mere mathematician" described by Poe is evidently unqualified to express the laws of relativity, but the matter may safely be entrusted to three characters, *A*, *B*, and *C* that Stephen Leacock introduces to us in his *Literary Lapses* as follows:

"The student of arithmetic who has mastered the first four rules of his art, and successfully striven with money sums and fractions, finds himself confronted by an unbroken expanse of questions known as problems. These are short stories of adventure and industry with the end omitted, and, though betraying a strong family resemblance, are not without a certain element of romance.

"The characters in the plot of a problem are three people called *A*, *B*, and *C*. The form of the question is generally of this sort:

'*A*, *B*, and *C* do a certain piece of work. *A* can do as much work in one hour as *B* in two, or *C* in four. Find how long they work at it.'

"Or thus:

"'*A*, *B*, and *C* are employed to dig a ditch. *A* can dig as much in one hour as *B* can dig in two, and *B* can dig twice as fast as *C*. Find how long, etc., etc.'

"Or after this wise:

"'*A* lays a wager that he can walk faster than *B* or *C*. *A* can walk half as fast again as *B*, and *C* is only an indifferent walker. Find how far, and so forth.'

"The occupations of *A*, *B*, and *C* are many and varied. In the older arithmetics they contented themselves with doing 'a certain piece of work.' This statement of the case, however, was found too sly and mysterious, or possibly lacking in romantic charm. It became the fashion to define the job more clearly and to set them at walking-matches, ditch-digging, regattas, and piling cordwood. At times, they became commercial and entered into partnership, having with their old mystery a 'certain' capital. Above all they revel in motion. When they tire of walking-matches—*A* rides on horseback, or borrows a bicycle and competes with his weaker-minded associates on foot. Now they race on locomotives; now they row; or again they become historical and engage stage-coaches; or at times they are aquatic and swim. If their occupation is actual work they prefer to pump water into cisterns, two of which leak through holes in the bottom and one of which is watertight. *A*, of course, has the good one; he also takes the bicycle, and the best locomotive, and the right of swimming with the current. Whatever they do they put money on it, being all three sports. *A* always wins.

"Now to one who has followed the history of these men through countless pages of problems, watched them in their leisure hours dallying with cordwood, and seen their panting sides heave in the full frenzy of filling a cistern with a leak in it, they become something more than mere symbols. They appear as creatures of flesh and blood, living men with their own passions, ambitions, and aspirations like the rest of us. Let us view them in turn. *A* is a full-blooded blustering fellow, of energetic temperament, hot-headed and strong-willed. It is he who proposes everything, challenges *B* to work, makes the bets, and bends the others to his will. He is a man of great physical strength and phenomenal endurance. He has been known to walk forty-eight hours at a stretch, and to pump ninety-six. His life is arduous and full of peril. A mistake in the working of a sum may keep him digging a fortnight without sleep. A repeating decimal in the answer might kill him.

"B is a quiet, easy-going fellow, afraid of A and bullied by him, but very gentle and brotherly to little C, the weakling. He is quite in A's power, having lost all his money in bets.

"Poor C is an undersized, frail man, with a plaintive face. Constant walking, digging, and pumping have broken his health and ruined his nervous system. His joyless life has driven him to drink and smoke more than is good for him, and his hand often shakes as he digs ditches. He has not the strength to work as the others can, in fact, as Hamlin Smith has said, 'A can do more work in one hour than C in four.' "

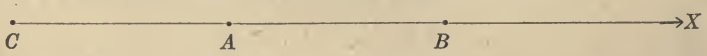
This arbitrary and headstrong A is just the man for our purpose. He is obsessed by the idea that the velocity of light is constant and he means to have it so regarded by his associates, B and C. In order to accustom B and C to his methods, A makes a few preliminary experiments in setting and regulating watches. For his first experiment A wishes to have B's watch always an hour behind C's, expressing standard time according to C's watch by values of a variable t and time according to B's watch by values of a variable τ. For his first experiment A establishes the relation between τ and t,

$$\tau = t - 1,$$

where τ is evidently a *function* of t; for a given value of t there is fixed by the equation a definite value of τ. As another experiment A wishes to have B's watch running only five-sixths as fast as C's (quite regardless of the inconvenience to B) and regulates B's watch so that B's time τ is again a function of C's time t,

$$\tau = 5/6\ t.$$

Now A is prepared to regulate his own watch and B's in another arbitrary way so that they will record the velocity of light as constant, independent of the observer's motion. A, B and C are disposed as follows: C is at rest; and A and B are in motion along the straight line CX with a constant velocity v. C's time, as before, is standard time and is represented by t; A's time and B's will be represented by τ. As A and B passed by C in their motion, each took care that his watch should agree with C's watch.



The problem in A's mind is to compare the time that it takes to flash a ray of light from A to B with the time that it takes to flash the ray back again from B to A. C argues that it evidently takes longer for the ray to pass from A to B than from B to A because B is moving away from the flash with velocity v, while A is coming up to meet it with the same velocity. But A says "I want that ray of

light to measure the *same time* both from A to B and from B to A, and if C's way of measuring time and space won't show such a result, I am going to devise a system of my own that will."

What A wants is to express his own time and B's by a function τ so that

$$\tau_1 - \tau_0 = \tau_2 - \tau_1, \tag{1}$$

where τ_0 is the time by A's watch when A sends the flash, τ_1 is the time by B's watch when B receives the flash and sends it back, and τ_2 is the time when A receives it again. The disturbing factor in the problem is the common velocity v of both A and B, therefore we may expect τ to be a function of v. And so it turns out;[2] τ is found to be a function of v and also of t, the time by C's watch since B and A left C, respectively. In terms of v and t the function τ is expressed by the equation

$$\tau = \frac{1}{\beta} \cdot t\,;\ \beta > 1 \tag{2}$$

where $1/\beta$ is a function of v which is less than 1 and becomes smaller as v increases, approaching zero as v approaches the velocity of light. In other words, the faster A and B go the slower their watches must go.

Then from C's point of view no two of the three watches are together. If C's watch and B's watch were together, say, at twelve o'clock, when B left C, at a given time t, say half past two by C's watch, B's watch is behind C's in the ratio 1 to β and is regulated so as to get behind more and more in amount, but always in the same ratio. The like is true of A's watch, but inasmuch as B passed C before A did, B's watch, while regulated like A's watch, has been losing time longer, and so from C's point of view is behind A's watch. If B were to make his watch agree with A's (from C's point of view) he would have to set it ahead, but would not need to regulate it. If either A or B were to make his watch agree with C's (from C's point of view) he would have to set it ahead and regulate it to run faster.

But A is not satisfied with his first achievement recording the velocity of light as constant for both A and B when the light is flashed along the line CX. He wants to make further changes in his system of measurement so that the number which records the velocity of light shall be the same for C as well as for A and B and shall be the same whether the light is flashed along CX or perpendicular to CX or in any other direction. To solve this problem A must change his unit of length as well as his unit of time and alter his foot-rule as well as his watch.[3] He has to make his foot-rule shorter then C's

[2] Supplement, p. 35.

[3] Supplement, p. 40.

when measuring in the direction of his motion CX, but when measuring at right angles to his motion, he may use the same foot-rule that C uses. This means that A has no longer a fixed unit for length independent of direction. He has one unit of length for one direction and another for another, but he records the velocity of light as constant and cheerfully puts up with all the attendant inconveniences.

So far we have regarded the question of relativity as a mathematical question, and the laws of relativity as those equations which would have to hold if the velocity of light is to be recorded as constant, assuming the laws of the "old" physics. And so far there can be no question whatever of the validity of our results. If the "old" assumptions hold true for the physical world, it would be quite possible for an observer to set and regulate his watch and shorten his foot-rule so as to record the velocity of light as constant, that is, as a fixed number of "miles" per "second," where the mile and the second do not have their old meaning if one is in motion, but return to their old meaning if one returns to rest.

But now let us consider the assumption of relativity, which may be stated in this form: The whole material universe shares with A his obsession that the velocity of light is constant under any set of circumstances whatever, and this velocity will be recorded as constant by perfect mechanisms such as watches whether the observers are at rest or in motion. This means that watches in motion regulate themselves and foot-rules adjust themselves to attain the desired end. So when A comes to regulate B's watch and his own, he finds that it is not necessary; the watches have done it for him, and as for shortening his foot-rule, the foot-rule has anticipated him and has obligingly shortened itself. This means, of course, that the constitution of matter is affected by its motion. Is this true? Opinions differ; I suppose no one knows.

If the relativity assumption is true, some surprising things might happen. If it were possible for a man to throw his watch into space with the velocity of light at twelve o'clock and have it return to him when the college clock was striking three, his watch would remain at twelve during its motion, would begin running again as soon as it reached him and would remain three hours behind the college clock until he set it forward. If it were possible for a man to leave the earth and travel through free space at the velocity of light for fifty years and return again to the earth, he would find himself younger than his own children because all his physical processes would have stopped in the meantime by virtue of his velocity.

But although the results of the relativity theory are surprising, they are not absurd because until lately we have never been concerned with velocities approaching in any way the velocity of light.

It is quite possible that electrons may move in accordance with the theory. At any rate, modern physicists are convinced that electrons do not move according to the classical laws of physics. Physicists are still divided into two camps with respect to Einstein's theories. Mathematicians are not divided because mathematics does not ask whether the laws of relativity are true or not, but restricts itself to showing what the laws of relativity are and from what assumptions they are derived.

Supplement

Let the fixed point C be taken as the origin of coordinates for the observer C, and let (standard) time according to C's system be recorded by values of a variable t, and the distance from C of a given point on the moving line AB be recorded by values of the variable x, measured in C's units of length. Let the time according to A's system be given by values of a variable τ, where τ is to be determined as a function of x and the velocity v so that

$$(1) \qquad \tfrac{1}{2}(\tau_0 + \tau_2) = \tau_1,$$

provided τ_0 represents the time of starting from A toward B of a ray of light, τ_1 represents the time when this ray of light is reflected from B back toward A, and τ_2 represents the time when the ray of light reaches A again.

It must be kept in mind that A's problem of finding a function τ such that

$$\tfrac{1}{2}(\tau_0 + \tau_2) = \tau_1,$$

is a mathematical problem and does not involve any physical assumption whatever.

To determine this function $\tau(x, t)$ A finds it convenient to introduce a new variable x' such that

$$x' \equiv x - vt,$$

where x' as well as x is measured in C's system. Since x' records the distance from the moving point A to a moving point P on AB, x' is evidently independent of the velocity v and also of the time t that the body AB has been in motion, and, therefore,

$$\frac{\partial x'}{\partial t} = 0.$$

From C's point of view the time occupied by the ray in passing from A to B is $\frac{x'}{V - v}$ and the time occupied by the ray in passing from B to A is $\frac{x'}{V + v}$, where V is the velocity of light in C's system and x' is

the coordinate corresponding to the point B. Then the equation (1) above may be written

$$(1') \quad \frac{1}{2}\left[\tau(0, t) + \tau\left(0, \left\{t + \frac{x'}{V-v} + \frac{x'}{V+v}\right\}\right)\right] = \tau\left(x', t + \frac{x'}{V-v}\right).$$

A's problem is to find, if possible, a function of x' and t that will satisfy (1'). Of course, it is possible that there is no such function, but, on the other hand, it is quite possible that such a function exists, and we will at least attack the problem as if it could be solved. Let us make the assumption that τ is a linear function of x' and t, whence, corresponding to a single value for x' and a single value for t there will be a single value for τ, and let us suppose further that the value of τ is zero when both x' and t are zero. This will make τ a linear homogeneous function of x' and t. Perhaps these assumptions will make the problem impossible, but perhaps not. At any rate, if we make these assumptions we may apply Euler's theorem for homogeneous functions, which may be stated for this special case

$$x'\frac{\partial\tau}{\partial x'} + t\frac{\partial\tau}{\partial t} = \tau(x', t).$$

By virtue of this theorem we may replace each one of the terms in (1') by an expression involving the partial derivatives of τ with respect to x' and t. For example, we may replace the expression $\tau(0, t)$ by the expression $t\frac{\partial\tau}{\partial t}$, and similarly we may replace the expression

$$\tau\left(0, \left\{t + \frac{x'}{V-v} + \frac{x'}{V+v}\right\}\right)$$

by the expression

$$\left\{t + \frac{x'}{V-v} + \frac{x'}{V+v}\right\}\frac{\partial\tau}{\partial t}$$

and the expression

$$\tau\left(x', t + \frac{x'}{V-v}\right)$$

by the expression

$$x'\frac{\partial\tau}{\partial x'} + \left(t + \frac{x'}{V-v}\right)\frac{\partial\tau}{\partial t}.$$

Making these substitutions in (1') we have the equation

$$(2) \quad \frac{1}{2}\left(\frac{1}{V-v} + \frac{1}{V+v}\right)\frac{\partial\tau}{\partial t} = \frac{\partial\tau}{\partial x'} + \frac{1}{V-v}\frac{\partial\tau}{\partial t}$$

or

$$(3) \quad \frac{\partial\tau}{\partial x'} + \frac{v}{V^2 - v^2}\frac{\partial\tau}{\partial t} = 0.$$

On the assumption that the function τ is linear and homogeneous, it is easy to find a function which will satisfy (3), namely,

$$\tau = a\left(t - \frac{v}{V^2 - v^2}x'\right), \tag{4}$$

where a is constant with respect to t and x'.

Of course, the proof of this mathematical pudding is in the eating, and the question is now, Have we actually found a function τ that will satisfy (1')? By substitution in (1') this is found to be the case and the problem is completely solved. It makes no difference what value is given to the constant a; any value for a will fulfil the required conditions, so that we are free to choose a to satisfy some other set of conditions.

A goes on to define the distance ξ along the line CX passed over by a ray of light in a given time τ by means of the equation

$$\xi = V\tau, \tag{5}$$

where V is the number which records the velocity of light in *C*'s system. By this means *A* keeps his own measure of the velocity of light in the direction CX equal to *C*'s measure of the velocity of light, and ξ, which has been defined as a function of τ, is readily fixed as a function of *C*'s length x'. If we substitute for τ its value from (4) we have the equation

$$\xi = aV\left(t - \frac{v}{V^2 - v^2}x'\right) \tag{6}$$

and since $t = \frac{x'}{V - v}$, equation (6) may be written

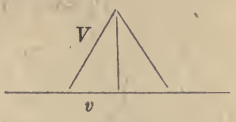
$$\xi = \frac{aV^2}{V^2 - v^2}x'. \tag{7}$$

A now defines the distance η perpendicular to CX, passed over by a ray of light in a given time τ by means of the equation $\eta = V \cdot \tau$ in order to keep the velocity of light equal to V when measured in the η-direction. Substituting for τ its value from (4) and noting that $x' = 0$,

$$\eta = aV \cdot t. \tag{8}$$

The quantity t may be expressed as a function of y as follows: From *C*'s point of view, a ray of light moving perpendicular to the line CX and reflected again so as to meet the observer *A* seems to have passed over the path of an isosceles triangle whose half base is proportional to v, whose leg is proportional to V, and whose altitude is y, so that the component of the velocity in the y-direction is $\sqrt{V^2 - v^2}$. The

time t is given by the equation



$$\frac{y}{\sqrt{V^2 - v^2}} = t \tag{9}$$

and hence

$$\eta = \frac{aV}{\sqrt{V^2 - v^2}} y. \tag{10}$$

The form of (10) as well as (7) makes it convenient to denote the fraction $\frac{V}{\sqrt{V^2 - v^2}}$ by the symbol β, and to write the undetermined constant a as $\frac{1}{\beta}$ times a quantity $\phi(v)$ which is itself undetermined at present. Then (4), (7) and (10) may be written

$$\tau = \phi(v)\beta\left(t - \frac{v}{V^2}x\right), \tag{11}$$

$$\xi = \phi(v)\beta(x - vt), \tag{12}$$

$$\eta = \phi(v)y. \tag{13}$$

Let us now impose two conditions upon the undetermined function $\phi(v)$; first, that a transformation from C's system to A's, where A is regarded as having a velocity v with respect to C, followed by a transformation from A's system to a system that has a velocity $-v$ with respect to A, shall restore C's system unchanged. This will not interfere with the measurements of the velocity of light and will introduce symmetry into our systems—that is, C's system relative to A will behave as A's system relative to C.

If a transformation is made from C's system to A's, we have the equations (11), (12), and (13). Similarly if a transformation is made from A's system to a system moving away from A with the velocity $-v$, we have for the new system

$$t' = \phi(-v) \cdot \beta(-v) \cdot \left\{\tau + \frac{v}{V^2}\xi\right\}, \tag{14}$$

$$x'^{4} = \phi(-v)\beta(-v)(\xi + v\tau), \tag{15}$$

$$y' = \phi(-v)\eta. \tag{16}$$

Substituting in (14) the values of τ and ξ from (11) and (12) we

[4] This use of x' must not be confused with the foregoing.

find that

$$t' = \phi(-v) \cdot \phi(v) \cdot t,$$

and, therefore, if C's system is to be restored unchanged by this double transformation, the product $\phi(-v) \cdot \phi(v)$ must be equal to 1. This imposes our first condition on the function $\phi(v)$.

Now let us impose on $\phi(v)$ the further condition that A's length η, measured in a direction perpendicular to his motion, shall bear the same relation to C's length y (parallel to η) as the coordinate η' of an observer A' who is moving away from C with A's velocity in the opposite direction. This again will not interfere with measurements of the velocity of light, but will introduce further symmetry into the given systems, since it will make the value of a coordinate perpendicular to the line of motion dependent only on the amount and not on the sense of the motion. If we impose this condition we have the equation

(17) $$\eta = \eta',$$

and since

(18) $$\eta = \phi(v) y,$$

(19) $$\eta' = \phi(-v) y,$$

it follows that

$$\phi(v) = \phi(-v).$$

We have now imposed on the function $\phi(v)$ the two conditions $\phi(v) \cdot \phi(-v) = 1$ and $\phi(v) = \phi(-v)$, both of which are satisfied if we put $\phi(v)$ equal to 1. This value for $\phi(v)$ reduces our former equations (11), (12), and (13) to the following:

(20) $$\tau = \beta\left(t - \frac{v}{V^2}x\right),$$

(21) $$\xi = \beta(x - vt),$$

(22) $$\eta = y,$$

where

$$\beta = \frac{1}{\sqrt{1 - \left(\frac{v}{V}\right)^2}}; \quad \beta > 1,$$

and since, for the point A, $x = vt$ and for other points on CX, $x - vt = x'$ these equations may be written

(23) $$\tau = \frac{1}{\beta}t \; ; \; \frac{1}{\beta} < 1,$$

(24) $$\xi = \beta x' \; ; \; \beta > 1,$$

(25) $$\eta = y.$$

This means that A's watch is running slower than C's and that his foot-rule, when measuring along CX is shorter than C's, but when measuring perpendicular to CX is the same as C's.

So far we have made no physical assumption. The physical assumption may be introduced at this point, namely, "The material universe behaves in accordance with the last group of equations."

Suppose now that a given mass m is moving in the direction CX with a given velocity. This velocity, measured by the observer C, is x'/t, and measured by the observer A, is ξ/τ. If we equate the momenta recorded by the two observers[5] we have the equation

$$m_C \cdot \frac{x'}{t} = m_A \cdot \frac{\xi}{\tau}; \quad \xi = \beta x', \quad \tau = \frac{1}{\beta} \cdot t.$$

From this equation we may find the mass from A's point of view in terms of the mass from C's point of view

$$m_A = \frac{1}{\beta^2} \cdot m_C.$$

Suppose that a given mass M is moving perpendicular to CX. Its velocity according to the observer C is y/t, and according to the observer A is η/t. If we equate the momenta recorded by the two observers, we have the relation

$$M_C \cdot \frac{y}{t} = M_A \frac{\eta}{\tau}; \quad \tau = \frac{1}{\beta} \cdot t, \quad \eta = y$$

from which we may find the mass from A's point of view in terms of the mass from C's point of view

$$M_A = \frac{1}{\beta} \cdot M_C.$$

The mass M is called by Einstein the *transverse* mass, the mass m the *longitudinal* mass of a given body. Both masses are functions of β and hence of A's velocity. Therefore, according to the Theory of Relativity, the measures of all three of the fundamental elements of physics, time, length, and mass vary with the velocity of the observer.

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[5] Cf. Bumstead, *Am. Jour. Science*, Vol. 4, No. 26, pp. 498–500.

THE DYNAMIC VALUE OF CONTENT

IN all discussions of the relation between mind and body and of the three main theories (parallelism, interactionism, and double aspect theory) and their variants, it is assumed that we have to deal with *two* series of phenomena, the physical or neural process and the psychic process. This is evident not only in the earlier discussions, but in such later ones as are contained in McDougall's "Body and Mind," Münsterberg's "Psychology, General and Applied," Parmelee's "Science of Human Behavior," etc., not to mention Warren's presidential address on "The Mental and the Physical"[1] and various other contributions. It is obvious that there is *some* connection between mind and body—hence the persistence of the efforts to explain it. The failure of any of the main theories or their variants to find general acceptance is due to the fact that they are either wrong or incomplete.

I do not need to describe the theories or the controversies over them, but will state at the outset that I shall try to show that all three theories are incomplete, since all posit only a *dual* series of phenomena; that there is in reality a *triple* series, *neural* process, *psychic process,* and *psychic* CONTENT; and that there is interaction among them. It is the failure to distinguish between the psychic *process* and the psychic *content,* and the almost universal use of the former when the latter is meant, that has retarded the solution of the problem.

Analysis of a concrete example will best illustrate this contention. Let us see what actually happens and trace somewhat minutely step by step as well as we can the successive events that occur when we examine the pupillary light reflex in a patient.

When light from a match held in front of the eye falls on the retina, movements are set up in the protoplasm of some of the retinal cells, *i. e.,* light-energy is transformed into, or sets free, energy of motion and probably chemical energy. So much we know, for pigment changes its position in the cells, and if the cells are stimulated long enough they undergo observable katabolic changes. Beyond this we can only infer. But reasoning from many facts we can justifiably infer that some activity of these retinal cells acts as a stimulus to the two sets of neurones in the retina with which they are in synaptic relation, the one laterally, the other internally. Doubtless certain of these set into activity (either by transformation or liberation of energy) some of the neurones, still within the retina, with which they are connected, and from which axones extend in through the optic nerve to three groups of cells in and near the optic thalamus.

[1] *Psych. Rev.,* Vol. 21, p. 79.

From one of these groups the stimulation is passed on through two or three successive sets of neurones, the last of which has its endings in the ciliary muscle fibers, and the pupil contracts. This is the light reflex, a pure reflex, unaccompanied by any awareness on the patient's part. It is not a psychological phenomenon, and is not regarded as a manifestation of mind.

At the thalamus certain neurones are stimulated to activity and the patient *senses "light"* (as distinguished from sound or other kind of sensation). This is the first of the psychic reactions.

From about this region the stimulation travels by two other nerve paths. The first leads through certain motor neurones, of which one branch traverses the facial nerve to the eyelids, whereupon the man *winks,* and of which another goes to various muscles, whereupon the man *converges* the axes of *his eyes* upon the point of light, *turns his head* a little, etc. These are reflexes, but the man is aware of them, and may be able to control them. (I will not undertake to trace the paths of neurones involved in the awareness or the control.)

The second nerve path leads to the cuneus in the posterior lobe of the brain, whereupon the man *sees "a light"* (perhaps "a yellow light at the end of a stick"). This is the act of perception, and it seems to be here that the record of percepts is made which are subsequently recalled as memory-images of things seen.

It may be also that from the region of the thalamus, where the man *senses "light,"* stimulation of unknown sets of neurones occurs, whereupon the man *feels "startled,"* and thence the stimulation is transmitted through motor cells in the cord to certain voluntary muscles (the man jumps), and through certain autonomic and sympathetic paths to the heart, blood vessels, and other organs (the heart beats irregularly, the face blanches or flushes a trifle, etc.). But this is aside from the main path which I wish to follow out, and I shall not refer to it again.

From the cuneus connections are made either directly or through the mediation of one or more sets of neurones with all parts of the cerebral cortex. We know little or nothing about the specific functions of most of them. But it seems a justifiable inference that functional activity of some group or other must subserve the purpose of each psychic event. On this supposition I shall continue to detail the patient's reactions.

From the cuneus unknown cortical neurones are stimulated, and the man *apperceives* the "lighted match held before his eye," *recognizes* the physician, and *recalls* a similar experience of a few days before.

From the cuneus and these other cortical neurones other unknown

cell-groups are activated and he *feels* "annoyed" at the light and at the physician for holding the lighted match before his eye.

From the cell-groups which subserve his feeling of annoyance widespread stimulation of other neurones extends in three main directions,—(1) the sympathetic-autonomic system, affecting heart, blood vessels, etc., (involuntary expression of emotion); (2) cortical and other motor centers, resulting in his scowling, etc., (voluntary instinctive expression of emotion); and (3) other cortical areas which subserve his *thinking* "that he won't stand such tricks," and thence to those subserving his *thinking* of "striking the physician, or pushing the match away, or blowing it out."

Some cortical cells doubtless subserve his making a choice among the alternatives, and probably others his determination to carry out the plan decided on. According to the choice made, certain motor neurones are activated and he puts out his hand and pushes away the match.

There are innumerable other physical occurrences which it would only be tedious to describe and which are unnecessary for the argument.

In all these reactions *neural, i. e.*, physical, *process* is obviously necessary. Some mode or modes of energy are at work, transmitted from neurone to neurone or set free in one by the action of the preceding one. Unless this were so, we would have activity arising *de novo*—something coming out of nothing—a state of affairs which we find nowhere else in nature, and which should therefore require indisputable proof to convince us that it exists here. The facts that we can not measure it, or change it to other better known modes, or even detect it, except by its results in behavior, are not such proofs. They only mean that our means of investigation are still too crude. We may look on the nerve-cell as a station for the transformation of one mode of energy into another, as a battery cell is a station for the conversion of chemical energy into electricity. It is a hypothetical energy whose mode we do not know. We can only call it *neural* energy, or energies. Since the neurones in the chain which leads to the reflex contraction of the pupil never subserve sensation as such, we must assume that they are incapable of doing so, *i. e.*, incapable of the mode of activity necessary for it, and hence have a different mode of activity or energy or a different range of vibration- or radiation-rate or whatever mode it may be, from those which subserve sensation, etc.[2]

[2] In this connection it would be interesting to see if a muscle-stimulatory effect could be elicited if the sensory ganglia of the cord should be connected directly with the motor nerves (thus eliminating the motor cell body) and the sensory end organs excited by their appropriate stimuli.

We see from experiments and clinical observation that the neurones which subserve sensation can not, or at least never do, subserve thinking, willing, executing, etc. We must assume then that each set has its own specific wave-rate or wave-length, or whatever may be its mode.

In the pupillary light reflex there is, so far as we know, no other than neural energy till the muscle cells are reached, where the last neurone sets free energy of motion.

But as soon as we begin to have the *psychic* reactions which we saw in the illustrative case, namely, sensing, perceiving, thinking (of different kinds, as recognizing, recalling, planning, choosing, etc.), feeling (*i. e.*, emoting), willing, another order of phenomenon is introduced. These activities are different from the neural processes on which they depend.

That they are *activities,* manifestations of energy, is evident from the fact that they finally result in muscular *movements* which would not have occurred but for them. If the man had not *sensed* the light, if he had not *felt* and *thought* as he did, etc., he would not have *acted* as he did. That we can and do use transitive verbs, either expressly or by implication, in referring to these activities, while in no sense a proof that they *are* activities, indicates that we regard them as such.

That they are not identical with neural process, nor yet with the nerve cells, though conditioned on them both, hardly needs to be stated. Such identification would be equivalent to that of the locomotion of an engine with the movements of its parts and with the engine itself.

That there are not *two aspects of the same thing* is evident when we consider that we can speak of two aspects only when the aspects are of the same order of phenomenon, and these are shown to be different. McDougall[3] has gone into these points quite exhaustively.

But what modes of energy are they? We must answer, as in the case of neural energy, that it is a hypothetical one, whose modes we do not know. To give them a name we may call them *psychical* energies, and subdivided by calling them sensing, thinking, etc., energies.

What are the relations between the neural orders and the psychical orders? Psychical activity is never seen in the higher animals except in connection with nerve-cells and presumably their activity, and this takes the form of discharge of neural energy. Since we seem justified in considering the psychic activities of sensing, thinking, etc., as modes of energy, are we not forced to the conclusion that

[3] *Cf. Body and Mind.*

while part of the neural energy is transmitted to or transformed in other cells, a part is converted into these forms of psychic energy—perhaps as chemical energy in the battery is converted into electric energy, or as motion is converted into electricity in the dynamo, or electricity into light and heat in the light bulb. This is the more probable, as in the conversion of one mode of energy into another, it is almost always into more than *one* other—in the dynamo, for example, there is always friction developing heat, there is sound, and there are currents of air, etc. It is probable, too, that since the neurones which subserve sensing never subserve thinking or willing, for example, there is marked specificity of both neural and psychic energies. We know of nothing that can give rise to psychic energies except neural energies (unless perhaps in the unicellular organisms), *i. e.,* there is no psychic process without neural process. Whether the converse is true, and *specific* neural activity occurs in the cells which subserve mental functions without giving rise to its corresponding psychic activity we do not know, though it is undoubtedly true that *nutritional* (chemical) changes take place in the nerve-cell without giving rise to psychic acts.

Mental activity is not fully described if we stop at neural process and psychic process. It tells us little of the man's acts if we say he sensed, perceived, apperceived, remembered, thought, felt, planned, decided, and acted. We want to know *what* he did in each of these activities.

We can not act without doing *something.* We can not sense or have a sensation, without sensing something, having a sensation of something; we can not think without thinking something. There is no such thing as mere abstract thinking or feeling or acting. We always sense "light" or "sound" or "warm," etc. We always perceive "a light" or "a sound" or "a warm thing." We always think definite thoughts. We always feel "annoyance," "surprise," "anger," etc. These are the *contents* of the various psychic activities or processes.

This content is not the same thing as the process, for to some extent they may be altered independently of each other. For example, in Trotter's and Davies's experiments on cutaneous sensation[4] the stimulus applied to a definite point of skin gave the sensation "warm"; when the temperature was raised above 100 degrees F., the sensation suddenly became "hot," and when raised above 120 degrees F., it became "pain," indistinguishable from that of a needle prick. Here the same neurones and the same psychic process were involved, but with a changing content. On the other hand, in the

[4] *Jour. Physiol.,* Lond., Vol. 38, p. 134.

psycho-motor retardation of manic-depressive psychosis the thinking process as process may be much slowed without alteration of the content as train of thought. This can be demonstrated in the continuous subtraction of 7 from 100, the patient using the same method of subtracting as when he is well and able to do it much more quickly.

Psychic process and psychic content are perfectly distinguishable, but are inseparable. Just as we can not have pure sensation without content, neither can we have any content without a process of which it is the content. This inseparability makes one again question whether we may not be dealing here with two aspects of the same thing. But, as before, we are dealing with phenomena of different orders, and we can not therefore properly speak of them in that relationship to each other.

What then are their relations to each other? McDougall[5] cites the telegram incident—a man receiving a telegram from a friend reading, "Your son is dead" or "Our son is dead"—to show that *meaning* has an effect on behavior. And he says, "Meanings are . . . essential links between sense-impressions and the behavior they evoke" (p. 311). Meaning in his usage is sometimes equivalent to content as I have used it here; sometimes it has a vaguer, larger, more inclusive connotation. But in such places it includes and is equivalent to the content of several processes (affects, trains of thought, complexes). He thus sees a dynamic value in meaning (hence in content), but can not explain it (p. 271), and still sees only *two* orders of phenomena involved in the problem.

My purpose in citing in such detail the reactions of the patient is to bring out clearly not only the neural processes and psychical processes, but the *content* as well, and especially its dynamic value. There it is seen that in each of the reactions ending in pupillary contraction, neural process alone as stimulation of one by the preceding one was sufficient to account for the end result. But from the time of stimulating the cells in the thalamus and the inauguration of psychic *processes* with their inseparable *contents* it is the latter which determine specifically what each of the succeeding reactions shall be. It was not *sensing* as such that determined the winking, the convergence of eye-axes, the turning of the head, but its content *light*. It is true that these are largely automatic and instinctive reactions and might occur in approximately (though not exactly) the same way as the result of any rather sudden intense sensory stimulus of other kinds, as of sound or pain, and it is perhaps possible that at this level sensation as such, regardless of content, may be sufficient to determine these "thoughtless" acts, if I may so call them. It is the

[5] *Body and Mind*, p. 268.

content of the sensation "light" that is the determinant of the percept "a light"—had the content of the sensation been different, the percept would have been different. It is the *content* of the percept that determines the apperception of the "lighted match before his eyes" and the recollection of a previous similar experience. It is the *content* of the thinking or of the sensing (perhaps both) that makes him feel annoyed. It is the *content* of the affect of *annoyance* that makes his heart beat faster, the scowl come on his face, and the thought arise that he won't stand such tricks, etc. If he had felt *amused, i. e.,* if the *content* of his affect had been different, a wholly different train of bodily and mental reactions would have occurred, through a wholly or largely different set of neurones. It is the *content* of his thinking (that he wouldn't stand such tricks; that he would strike the physician or push the match away or blow it out) that led to his choosing the second plan and deciding to carry that out. It was the *content* of the plan and the *content* of the decision that led to his actually pushing the match away. In no case, unless possibly in the automatic instinctive acts, was it the psychic *process* as such that led to the subsequent reactions.

It can also be shown that content determines to some degree the extent or the intensity, or both, of other mental activities and of conduct.

Content thus enters dynamically into the causal series of reactions that lead from sensation to behavior. Since nowhere else in nature do we see energy set free without some antecedent energy to give it a push, as it were, we are driven to the conclusion that psychic content is some mode or modes of energy. Since we find it inseparably associated with psychic process, and since we do not see it giving rise directly to psychic process, we must assume that psychic process gives rise to it; that is, that psychic energy is transformed into or sets free content-energy, probably the former. This content-energy then serves as a director or selective stimulator, or perhaps as a liberator of neural energy. It is perhaps Max Meyer's "ghost" of a few years ago.[6] How this directive function is carried out is a problem for future investigation.

The real relationships that exist among the three sets of phenomena may be shown diagrammatically, after the analogy of McDougall's diagrams illustrating the different psycho-physical theories.

Fig. 1 represents the side view of the succession of events in the case cited. The dark circles represent the neurones and the neural energy subserving the psychic processes. The light circles represent the psychic processes of sensing, perceiving, etc. The squares rep-

[6] This JOURNAL, Vol. 9, p. 365.

resent the psychic contents. The lines represent the direction in which energy is propagated.

Fig. 2 represents the same events in bird's-eye view, as a map or plan. Neurone connections are shown by lines connecting the dark circles. The actual path taken in the case cited is indicated by the

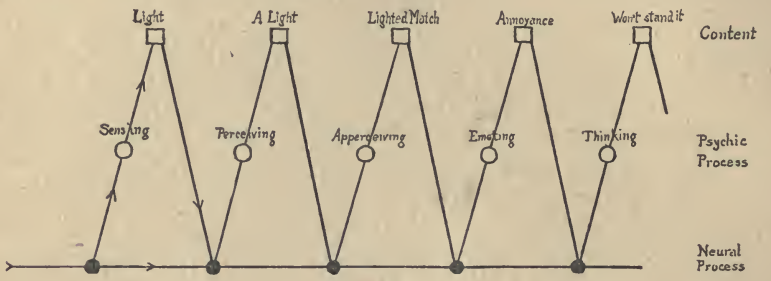

FIG. 1

double lines, of which one connects the neurones, the other represents the selective influence of the content. The possible paths not taken are represented by the square-and-circles from which no lines radiate. Energy is propagated from left to right.

Thus the parallelists are right to the extent that there are parallel

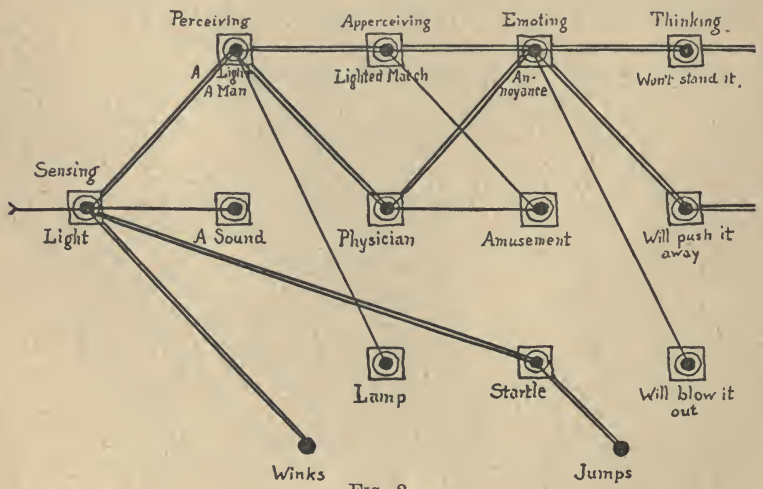

FIG. 2

series of events, and the interactionists are right to the extent that there is interaction between the parallel lines. But both are incomplete in that they fail to recognize that one of their lines, psychic process, is in reality two lines, (1) psychic process in a stricter

sense and (2) psychic content, and that the psycho-physical relationship consists of a triple series, not a dual one. The double aspect theory seems not to have a leg left on which to stand.

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REVIEWS AND ABSTRACTS OF LITERATURE

Fundamental Conceptions of Modern Mathematics—Variables and Quantities. ROBERT P. RICHARDSON and EDWARD H. LANDIS. Chicago and London: The Open Court Company. 1916. Pp. 216.

This is the first instalment of what threatens to be a very large work. The authors have divided that part of their subject which deals with "Algebraic Mathematics" into thirteen parts, of which the present volume is Part One. The important arguments in this book have been published in the *Monist*[1] under the title "Numbers, Variables, and Mr. Russell's Philosophy."

In this review only the logical and philosophical aspects of the book will be considered. Concerning a few of the more technical mathematical discussions in it I do not care to pronounce judgment, though I may mention the fact that when I persuaded a certain eminent mathematician to read it, his condemnation was too severe to be printed.

The authors of a work dealing with the Philosophy of Mathematics might be expected to be thoroughly acquainted with the works of Frege, Schroeder, Peano, Couturat, Poincaré, Whitehead and Russell. Frege has been at least partially read, but without understanding.[2] The only indication that our authors have read Peano or Schroeder is a statement concerning Frege that "as a logician he can not be ranked above the level of Schroeder or Peano."[3] Neither Couturat nor Poincaré is mentioned. Russell's *Principles* of 1903 has been read with partial understanding, but no reference at all is given to the first volume of the *Principia Mathematica* which has been before the public for about six years. One wonders when this work was written.

There are perhaps three points on which it can be commended. In the first place it points out many confusions and examples of carelessness in mathematical definitions, especially concerning num-

[1] July, 1915, Vol. 25, pp. 321–364.
[2] P. 60.
[3] P. 152, note 2.

bers, quantities, and variables. In the second place it rightly insists (in rather strange contrast to the author's avowed Nominalism) on the distinction between symbols and the entities symbolized.[4] The third point concerns a criticism of Russell printed not in this volume, but in the article in the *Monist* to which I referred.[5] Both in the *Principles* and in the *Principia* Russell drew a distinction between the real and the apparent variable (between "any" and "every"). Our authors criticize this, and I think the criticism is correct. I will add that Russell declared in 1914 that the apparent variable is sufficient and that no use need be made of the real variable, but I do not know that he has published this as yet.

The greater part of the volume is concerned with definitions, yet the authors seem absolutely ignorant of modern discussions of definition such as those by Frege and Russell. They assume that for what they call "Realism" all definition is *"per genus et differentiam."*[6] The reader may be sent to the book itself for a discussion of "Realism" ("a doctrine which upholds the existence of things in themselves or substrata underlying our perceptions") and the "Nominalism" which the authors themselves hold.[7]

After saying that number, like other attributes, is based upon resemblances and differences between objects or groups of objects,[8] they hold up their hands in horror at Russell's definition of number.[9] I can not find their own definition. They distinguish between what they call a concrete number (that is, a definite class having a certain number as "attribute") and what they call an abstract number (that is, the number attribute itself). Curiously enough Russell is accused of ignoring this distinction.[10] Then they pass to a discussion of equality and identity.[11] They hold, though for no cogent reasons, that different entities can not have the same attribute, but similar or equal attributes. Doubtless there is some confusion in their minds between "concrete" and "abstract" numbers, but as the question is of some philosophical importance I shall say a word on the problem itself.

Every entity which is known is a "fact," by which I mean all that is symbolized by a complete true proposition. Every "elementary fact" (a fact not involving an apparent variable, a fact which is not "general") contains at least one particular or indi-

[4] Pp. 98–101. *Cf. Monist,* Vol. 25, pp. 337–338, 350.
[5] *Ibid.,* pp. 353, 363–364 (and note 58).
[6] P. 157.
[7] Pp. 155–160.
[8] P. 3.
[9] *Monist, ibid.,* p. 329.
[10] Pp. 4–5. *Monist, ibid.,* pp. 327, 330.
[11] Pp. 5–10. *Monist, ibid.,* pp. 325, 343.

vidual, and at least one universal, either a quality or a relation. Neither a particular nor a universal is ever discovered alone. They are always found only as aspects of some complete fact. Now nearly every one will admit that the same particular or individual can occur in two or more different facts.[12] If the same particular can occur in two different facts, why do we tend to find a difficulty in the theory that the same universal can occur in two different facts? Is it because the particular is usually located by definite spatial relations, while the universal has no spatial relations and belongs with particulars separate in space? This is surely no reason, and I know of no reason except prejudice.

The authors insist that a "variable," in the narrow sense of the term, is neither a symbol, nor one quantity, but is constituted by a set of quantities or numbers which are taken together in order to study their relations.[13] Much abuse is heaped upon Russell for using the name variable in a wider sense. He is accused of being unable to see any difference between the use of x in the proposition "the variable x approaches the limit a" and its use in the proposition "every x is greater than zero."

I regret to have to say that these writers seem incompetent to deal with the logical aspect of their subject. It is a pity that the first ambitious American work in this field should have so inadequate a foundation.

A. P. Brogan.

University of Texas.

An Introduction to Ethics for Training Colleges. G. A. Patterson. New York: The Macmillan Company. 1915. Pp. 248.

Teachers, and particularly students taking courses in teaching, have expressed to the reviewer their sense of a needed course in ethics. There seems in general no adequate course offered in institutions for the training of teachers.

This book is an attempt to provide a text-book for such a course. It wisely does not undertake the discussion of the difficult metaphysical problems underlying the moral life. But almost half of the book is devoted to the exposition of the psychological foundations of conduct. After the work of William James, A. F. Shand in his *Foundations of Character,* and William McDougall in his *Social Psychology,* to mention no others, no ethical treatise, especially for teachers, would be worth while which left out a study of the structure and development of moral consciousness.

The second part of the book discusses the usual topics of a treatise

[12] *Cf.* Russell, *Our Knowledge of the External World,* p. 150.

[13] Pp. 145–160, *Monist, ibid.,* pp. 345–361.

on ethics, always with a view to the special purpose of their relation to teaching.

In so brief a treatment of so broad a field doubtless the impression of superficiality is unavoidable. In the hands of a competent teacher, however, vital discussions of certain positions taken by the author would remove such an impression. An example of this is in the acceptance of the standard as reason. Just what does the author mean by reason? Is it the *a priori* faculty of the intuitionalists, or is it the process of reflection on the data of experience? The same problem arises, though in a different form, in the discussion of the nature of conscience in the first part of the treatise. A mastery of this central problem would seem to be of the greatest importance to any one who would undertake, not merely to impart information, but to mold character, which is, after all, what education fundamentally means.

In justice it should be said that the book is a well-arranged, clearly stated presentation of the subject from the point of view of the generally accepted moral philosophy, and well adapted, on the whole, to the special needs of the person preparing to teach.

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JOURNALS AND NEW BOOKS

MIND. April, 1916. *The Plot of Plato's Republic* (pp. 145–176): P. S. BURRELL. – Continues a detailed expository analysis of the contents of the *Republic*, maintaining the thesis that the dramatic form of the *Republic* is closely related to its subject-matter. Special attention is here given to Plato's account of the origin of society as set forth in Book II. *The Influence of Mathematical Conceptions on Berkeley's Philosophy* (pp. 177–192): G. A. JOHNSTON. – "By making use of comparatively recently discovered methods of calculation by signs and symbols he (Berkeley) sought to give an explanation of nature and its laws by means of the relation of sign and thing signified, and thus establish an Algebra of Nature; and he endeavored to develop an Algebra of Ethics by applying algebraic methods to the problems of morality." *Dreams as Psychical Explosions* (pp. 193–205): J. C. GREGORY. – A theory for the interpretation of the origin and nature of dreams to the effect that our expanded sense of duration in dreaming is due to the fact that most dreams occur at the moment of awakening at which time there is "an expanding effect of a sudden or explosive rise of interest." This theory is opposed to Bergson's relaxation or disinterestedness theory. *Retentiveness and Dreams* (pp. 206–222): HENRY RUTGERS MAR-

SHALL. – Distinguishes retentiveness from memory, and gives its physiological basis. Retentiveness does not mean storage of stimulative effects, but a new brain system as the result of readjustments. On the side of awareness there are sudden shiftings of the threshold of consciousness portraying retentiveness at different levels. Dreams represent sudden shiftings due to sudden arousings from sleep. *Discussion: The Nature and Geometry of Space:* J. E. TURNER. – A review of Mr. Broad's recent article: "Is our Space Euclidean?" *Critical Notes:* A. W. Benn, *The Greek Philosophers:* A. E. TAYLOR. A. J. Balfour, *Theism and Humanism* (Glasgow Gifford Lectures, 1914): J. S. MACKENZIE. John Dewey, *German Philosophy and Politics:* F. C. S. SCHILLER. D. C. Macintosh, *The Problem of Knowledge:* JOHN LAIRD. A. Mieli, *Le Scuole Ionica, Pythagorica ed Ileata:* P. E. B. JOURDAIN. H. Sturt, *The Principles of Understanding:* L. J. RUSSELL. *New Books. Philosophical Periodicals. Notes.*

MIND. July, 1916. *Laws of Thought* (pp. 289–307): J. S. MACKENZIE. – The fundamental laws of thought are to be regarded not psychologically nor as conditions of reality, but are to be interpreted as the implications involved in the exercise of thinking as, for example, having a concept implies the law of identity, judgment implies the law of contradiction, or inference implies the law of sufficient reason. *Berkeley's Realism* (pp. 308–328): J. LAIRD. – In view of current realistic interpretations of Berkeley, the attempt is made to show the exact relation of his philosophy to the neo-realism. Special attention is given to the points of difference, namely, Berkeley's theory of universals, the divergence with regard to the operations of the mind, and the differences between the Berkeleian phrase "in the mind" and the realistic doctrine of "independence." *The Plot of Plato's Republic* (pp. 329–364): P. S. BURRELL. – Seeks to show the essential unity of the *Republic,* and maintains that the plot develops without any break in continuity. Plato's procedure is to start with certain assumptions admitted as principles and to deduce what follows from these principles. Plato accepts the sophistical principle that every one seeks his own good, and this principle necessitates an account of the origin of society, the delineation of an ideal state, and the perversions of justice. *Discussion: The Egocentric Predicament.* HUGH A. REYBURN. – Disagrees with Professor Perry on his view that the ego-centric predicament, so far from being a basal argument for idealism, is a barren tautology. *Critical Notes:* G. Heymans, *Einführung in die Ethik auf Grundlage der Erfahrung:* A. E. TAYLOR. C. E. Vaughan, *The Political Writings of Jean Jacques Rousseau* (2 vols.): BERNARD BOSANQUET. *New Books. Philosophical Periodicals. Correspondence.*

Maudsley, Henry. Organic to Human: Psychological and Sociological. London and New York: Macmillan Company. 1916. Pp. viii + 386. $3.75.

Royce, Josiah. The Hope of the Great Community. New York: The Macmillan Company. 1916. Pp. 136. $1.00.

Wundt, Wilhelm. Elements of Folk Psychology. Tr. by Edward Leroy Schaub. London: George Allen and Unwin; New York: The Macmillan Company. 1916. Pp. xxiii + 532. $3.75.

Yerkes, Robert M.; Bridges, James W.; and Hardwick, Rose S. A Point Scale for Measuring Mental Ability. Monograph No. 1 of the Psychopathic Hospital of Boston. Baltimore: Warwick and York. 1915. Pp. 218. $1.25.

NOTES AND NEWS

THE TWENTY-FIFTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE American Psychological Association held its twenty-fifth annual meeting at Teachers College, Columbia University, on Wednesday, Thursday, Friday, and Saturday, December 27 to 30. Attendance at the various sessions was larger than at any previous meeting, 141 being registered. Special features were the twenty-fifth anniversary programme, the anniversary banquet, and the exhibits of apparatus, materials, and literature.

On Thursday afternoon four papers were read as part of the anniversary programme. Professor Cattell spoke on "Our Psychological Organization and Research," Professor Jastrow on "Varieties of Psychological Experience," Professor Dewey on "The Need of a Social Psychology," and Professor Baird read a paper prepared by Professor Hall, who was prevented, by an accident, from attending the sessions. Thursday evening, at the banquet in the Hotel Marseilles, after-dinner speeches of a retrospective and reminiscent character were made by Professors Calkins, Ladd, and Sanford, and shorter speeches by Professors Jastrow, Thorndike, Watson, and Dr. Marshall. There was an attendance of 171 at the banquet, a record number.

As part of the general meeting of the Association for the Advancement of Science there had been prepared, in the gymnasium of Columbia University, a general exhibit of scientific materials, work, apparatus, etc., representing fifteen sciences. The psychological section was a prominent part of this exhibit and was a center of great interest. The Bureau of Educational Experiments, having its head-

quarters in the Educational Building, 70 Fifth Avenue, New York, had on display their collection of psychological and pedagogical tests and literature, presented in an interesting and accessible manner. The C. H. Stoelting Company had prepared their usual exhibit of psychological instruments and materials, and fifteen pieces of apparatus or teaching materials were exhibited by individual members of the Association.

The address of President Dodge occurred on Wednesday evening, the topic being "The Laws of Relative Fatigue." The annual business meeting of the Association followed the President's address, and after the business meeting an informal smoker was held in the psychological laboratory in Schermerhorn Hall. Detailed account of the business meeting will be found in the Proceedings of the Association and in the report of the retiring secretary, Professor Ogden. Professor Robert M. Yerkes, of Harvard University, was elected President of the Association for the ensuing year. Professors W. V. Bingham and H. L. Hollingworth were elected members of the Council for three years, succeeding Professors Franz and Whipple. Various committees reported progress, and appropriations were made for the purpose of facilitating their work. Of particular interest is the report of the Committee on the Academic Status of Psychology, prepared by Professor B. T. Baldwin. This committee presented its report in printed form, under the title "A Survey of Psychological Investigations with Reference to Differentiations between Psychological Experiments and Mental Tests." Copies of this report will be distributed to members of the Association.

Professor H. S. Langfeld was elected Secretary-Treasurer for the ensuing three years. An invitation from the President of the University of Michigan to hold the next annual meeting at Ann Arbor was accepted. Professor G. C. Basset was elected representative of the Association on the Council of the American Association for the Advancement of Science for the year 1917. Thirty-two new members were elected. Professors Baird and Angier and the Secretary are to constitute the programme committee for next year.

On Friday morning a joint session was held with Section L., A. A. A. S., and on Friday afternoon a joint session was held with Section H, at which the retiring Vice-president, Professor Lillien J. Martin, gave her address on "Personality as Revealed by the Content of Images."

Abstracts of the papers read at the regular sessions were printed before the sessions and distributed at the meetings. Inasmuch as these abstracts are to be published in the *Psychological Bulletin*, no attempt will be made here to summarize the contents of the various papers. The various fields of psychological interest were

very unevenly represented on the programme. On animal psychology there were but two papers, both dealing with definitions or general method. Physiological psychology was also represented by only two papers. On topics of abnormal psychology there were six papers. Three papers bore directly on problems of educational psychology, two particularly on apparatus, one on analytic psychology. General experimental psychology was represented by sixteen papers, varying widely in subject-matter. Almost as many papers, fourteen, were presented, bearing directly on mental tests, their validity, evaluation, elaboration, and significance. Aside from the papers on defectives and those on educational features, only one paper was presented in applied psychology.

H. L. HOLLINGWORTH.

COLUMBIA UNIVERSITY.

PROFESSOR R. S. WOODWORTH, of Columbia University, has completed the series of Jesup lectures of the American Museum of Natural History. The general topic was "Dynamic Psychology" and the subjects of the individual lectures were as follows: "The Modern Movement in Psychology," "The Problems and Methods of Psychology," "The Native Equipment of Man," "Acquired or Learned Equipment," "The Factor of Selection and Control," "The Factor of Originality," "Drive and Mechanism in Abnormal Behavior," and "Drive and Mechanism in Social Behavior."

DR. ERICH BECHER has been elected as successor to the late Professor Külpe at the University of Munich. Becher has been *ordinarius* at Münster since 1909, and among other writings has issued a volume on *"Gehirn und Seele."*

THE Johns Hopkins Press will shortly commence the publication of a series of translations and reprints with the general title of *Psychology Classics* under the editorship of Professor Dunlap.

W. H. NORCROSS, of Johns Hopkins University, has been appointed associate professor of psychology, philosophy, and education, in Dickinson College.

DR. HOWARD C. MARSH has been advanced from the grade of instructor to that of assistant professor of philosophy at the College of the City of New York.

AT the Ohio State University E. Leigh Mudge has been appointed instructor in psychology.

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THE JOURNAL OF PHILOSOPHY
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MATTER AND ENERGY

THE concepts of matter and energy are the results of scientific analysis of the physical world and the most fundamental concepts in terms of which the events of that world can be construed. In the philosophic study of such concepts the primary need is a close inspection of the realities that they denote, for all concepts, if they are not sterile, must denote some sort of reality, and it is the nature and value of this reality that primarily concerns us as metaphysicians. Our materials are, then, the researches of the scientists, and these are to be understood as closely as possible to the way in which the scientist understands them, that is, with the least possible corruption through philosophic presupposition. If our results are in opposition to utterances by scientists, they will not be opposed to the scientists' facts and practise, but only to the somewhat hasty and often antiquated philosophic points of view which men, most painstaking in other matters, so often inconsiderately interject into their work.

The history of the atomic concept has been too long and complex to receive detailed consideration here, for atoms have been imagined since the dawn of history. In the Soutras of India, probably before 1200 B.C., Kanada defines substance as "that in which qualities abide and in which action takes place. Earth, water, light, air, ether, time, place, soul, mind, such are the substances." To the first five of these is attributed atomic structure. The atoms are simple and indivisible else "there would be no difference of magnitude between a mustard seed and a mountain, a gnat and an elephant, each alike containing an infinity of particles."[1] Probably independently of this, atomic theories arose early in Greek thought and since, as Bacon wrote, "Men cease not from abstracting nature till they come to potential and uninformed matter, nor on the other hand from dissecting nature till they reach the atom."[2] But we are now primarily concerned with the use of the concept since the epoch-making work of Dalton,

[1] Freund, *The Study of Chemical Composition*, pp. 229–30.
[2] *Novum Organum.*

for it was Dalton who first transformed it into a valuable instrument for experimental science.

The primitive suggestion, as it appears in Kanada and even more clearly with the pre-Socratics, is the need of finding something permanent and abiding so that, with the aid of varying relations, change can be described. The fact that practical needs compel us to treat realities as in some way the same, although changed, is the cue to the structure of logical thinking even more than the spectacle of the Heavens so ardently apostrophized by Poincaré,[3] for through it, the distinction of terms and relations becomes manifest, and from the application of this distinction to the analysis of the physical world, some form of the atomic conception must have arisen even without the model of the starry heavens above, and through it also, the development of atomic theories is controlled with a concreteness that Poincaré's more poetically inspiring model could never have compelled.

Dalton's achievement is that of giving an empirical character to the terms and relations suggested by atomic analysis. To make this evident it is only necessary to review the specific points of his hypothesis. He writes (1) "I should apprehend there are a considerable number of what may properly be called elementary principles (atoms), which can never be metamorphosed one into another by any power we can control. We ought, however, to avail ourselves of every means to reduce the number of bodies or principles of this appearance as much as possible; and, after all, we may not know what elements are absolutely undecomposable and what are refractory, because we do not apply the proper means for their reduction." In other words, there are different kinds of atoms distinguishable by their properties and actions. (2) "Matter is not infinitely divisible." This seems to have been a logical postulate for Dalton, but has proved itself experimentally valid within the field of chemical process as he understood it. With it is associated the next principle, (3) "No new creation or destruction of matter is within the reach of chemical agency. We might as well attempt to introduce a new planet into the solar system, or to annihilate one already in existence, as to create or destroy a particle of hydrogen." And so far we are merely in line with the current historical form of atomism of his day, but the remaining assertions give concrete additional properties that are sufficient to transform the status of the whole conception. (4) The atoms have characteristic weights, (5) they combine in simple numbers, and (6, 7) their relative weights and the complexities of compound atoms (molecules) and their rules of chemical synthesis may be determined. The atomic theory, then,

[3] *The Value of Science*, Ch. VI.

has come to give us a set of empirically determined terms and relations with the marked advantage over the old that by them observed changes can be predicted and controlled and empirical verification, at least by indirect observation, found.

To-day the atomic analysis of matter is being transcended, yet, with the exception of certain determinations of specific characteristics, the hypothesis of Dalton still stands. What has happened is that a closer contact through experiment with the behavior of material substance has indicated that the atom represents only a stage of analysis and that, for the study of certain processes such as phosphorescence, light, radio-activity, electric and magnetic phenomena, changes must be described that can not be expressed in terms of known atoms, but demand a more basic element out of which atoms may be constituted, and the electron has come to fill the place. Whether in turn this must give way to something still more minute is a question for the future of science to show, but at any rate, the type of analysis of the physical world will remain the same in so far as such analysis is retained.

The real existence of atoms and of electrons has been both denied and affirmed. Experimental evidence to-day seems to favor the affirmation, but the problem is not quite as simple as some of the experimentalists would have us believe. There is a delusive clearness about the alternative "real entities" or "physical postulates" and "hypothetical entities." We shall have to return to this problem again, but it can best be done when we have made a preliminary examination of that other concept so closely associated with that of matter, the concept of energy, and this concept will now concern us.

Energy is currently defined as the capacity to perform work, but, as far as observation is concerned, Hume might have pointed out that we find merely a means of correlating change in one part of our experience with changes observed elsewhere. If it asserted that it takes a certain amount of energy to raise a given object to a certain height, it is meant that there is an observable descriptive correlation between the mass and velocity of an associated body that is said to cause the effect and the effect produced. The simplest observable exhibition of energy is in the communication of motion by contact of a moving body with something that moves after the contact. For the ancients this movement was an inherent property of material substance or of some specific substance, such as the Nous of Anaxagoras, and this inherent property was "communicated" from one body to others. The term force is roughly used to cover the situation, and still remains popularly the name of a property by virtue of which changes are produced. But the term force is too general to cover the facts as they appear under detailed analysis

and in modern science it becomes necessary to find a term to express in quantitative form the persistent correlation observable between the kind and amount of movement of the first moving body and that of the body to which movement has been "communicated," and for this purpose, early in the nineteenth century, Young introduced the term energy.

But the same study that leads to quantitative correlation, also brings out certain other features of the propagation of motion. Thus the motion of mass, a cannon ball for example, may result primarily in a motion of molecules when the ball hits an impenetrable armor plate, that is, in heat, but nevertheless, there is a definite qualitative relation between this heat and the mass and velocity of the moving ball. And besides these direct contact cases, there are a large number of cases where the propagation of change from one to another takes place when the bodies appear to be at a distance, as in gravitation, illumination, chemical affinity, and the like. Probably, because it is the way we work with our bodies, we accept contact effectiveness as needing no explanation, but seek hypotheses to cover the latter sort of propagation. However, the latter is no more mysterious than the former. It is merely less close to human behavior. Why should a billiard ball roll when struck by another, or an object move because it is pushed? To attempt a scientific answer in terms of solidity, resistance, elasticity, and the like has no more value than the explanation of the dormitive powers of opium through its soporific virtue. The only real answer is that physical reality behaves that way and at that point all our questionings must cease except in so far as we can attain description of our facts in increasingly general terms and discover an ever growing number of relations and correlations between them.

But the case of what appears naïvely as action at a distance demands further analysis. As far as unaided human observation is concerned, there are many instances where a change in one part of reality involves changes elsewhere. Closer observation shows that in many such cases, the introduction of something between the "cause" and its "effect" results in the propagating change being intercepted by the inserted body and taking place in it instead of at the point where it has originally appeared. The most simple example is the insertion of a screen between a source of light and the illuminated object, where the object loses its illumination and the screen receives it. We are then led to assume that the propagation of this change is really continuous between the two bodies and this hypothesis has served as a basis for a vast amount of scientific discovery. We are also led to assume the existence of some medium of which the propagated change is a mode of motion and the result is

the ether concept, of which at present the sole characteristics are those introduced to satisfy a formula accounting for a connection of certain things whereby changes in the one involve changes in the other also.

The most striking feature of all scientific references to energy is the apparent necessity of conceiving it always as a case of something in motion, mass, molecule, atom, electron, or ether. The holding in check or distorting of certain normal motions through an outside agency or opposed tendency to motion, as when a spring is held wound, is what is known as potential energy, and the capacity to produce change while regaining or continuing normal motions, as when the watch is running, is the same energy in kinetic form. But it is always expressible in terms of something in motion or tending to move, and it is also noteworthy that the propagation of energy, whenever possible, is conceived as a contact push, either directly or by a medium. In a few cases pulls are also suggested though, at last analysis, these often reduce to some form of ether disturbance where the pull is like the suction behind a vessel moving through the water and really reducible to pushes. It is interesting also that the best of the tentative explanations of that most mysterious of all physical processes, gravitation, although hardly reaching the value of fruitful scientific hypothesis, have also been made in terms of push.

At last analysis, then, we think of energy in terms of pulls and pushes, but except as a description of immediate experience, nobody knows what a pull or a push is. There is a tendency to feel the push as the more ultimate concept because experienced pulls always involve the presence of some kind of material connection, like a string, through which the pull becomes effective and in the case of theoretically detached objects, like atoms, molecules, and electrons, it is not so clear what takes the place of the string unless we introduce some conception such as that of ether strain of which the concrete meaning seems to be wholly undetermined by the chemists and physicists except in so far as to account for the phenomena they have in mind, that is, it is an entity defined purely hypothetically. The analogical suggestion is often that of currents in a liquid and this, of course, transforms the idea into that of push.

But if we accept the push concept as the ultimate are we then provided with something more intelligible? I think not. That the cue pushes the billiard ball is at best only a way of describing what takes place when a certain contact between a moving and a stationary object is made. It is again a case of a description of an immediate experience. Why should an object move when pushed? To answer in terms of its resistance to penetration does not carry us any farther

toward an understanding of fact, for it is only to move circularly in terms of concepts already derived from description of experience alone.

This comment, however, is not meant to suggest an unknowable back of scientific reality as was done by Herbert Spencer, for against Spencer, Royce is quite right in asserting that the only things that are unknowable in an absolute sense are the answers to absurd or self-contradictory questions. Our only aim is to emphasize the functional and empirical basis of all knowledge. We must begin with a description of certain observed facts, whether we begin with a high and complex order of phenomena, as in studying the problems of the social sciences, or with the most minute phenomena that enter into the ultimate analysis of the physicist and chemist. And if we begin in this fashion, the only meaning of knowledge is to pick out relations discoverable between more complex phenomena that can be construed as complications of the elementary observated facts.

The facts that give rise to our concept of energy seem to indicate that change found in any part of the universe spreads to other parts in a fashion capable of definite qualitative and quantitative description. The principle of the conservation of energy is merely the universalizing of this generalization, an assertion of the effective unity of the whole. The principle, as Poincaré asserts, can not be definitely proved, but it is nevertheless a successful generalization of experience, on an equal status with any other empirical law. In other words we have in energy the physicists' expression of the contactual unity of the physical world, but to see the full consequences of this we must return to the analysis of matter with which we commenced.

The scientific world presents itself to us as a collection of elements, mass, molecule, atom, electron, which represent stopping-points in our efforts to analyze, and energies, or concrete formulations of the results to be expected elsewhere, as to kind and quantity, when a specific change takes place in any of these elements or in any group of them. But we must not falsely assume that we have here constituent elements and a world built up through different arrangements and combinations of them. Let us return to our concepts and see them with respect to the realities they denote.

First consider the atom with its affinities and valency. If we ask what it is, we are told that we have a collection of electrons having certain specific motions and, if our informant were sufficiently wise, he might tell us by what laws or general description of behavior, all its energies and substance properties result from the particular number of electrons, arranged in the particular way that make up its structure. The atom with its properties, has ceased to be a substance, but is an integrated group of substances, electrons, and their energies.

These electron energies have become part of the substance of the atom and the atom is really an entity in about the same sense that congress is an entity. Indeed, in so far as any "element" shows complexity of behavior, it is probable that it can be analyzed into a complex and it is highly doubtful whether our electron is as simple as now appears.

The historic problem of an ultimate element is the one that will suggest itself to most philosophers here, but to one who has comprehended the foregoing, the classic antinomy between the finite and infinite divisibility of matter will not be the starting-point. Resting-points in analysis are determined by the needs of human action, and what we are satisfied to call elements depend on the nature of reality as limiting and making possible our activities. They may vary as we acquire new ends, more elaborate technique, and closer observation. But reality, as such, is not divided by our analysis, but merely thrown into useful perspectives. If one were to attempt an absolute metaphysical assertion, it would be necessary to hold that reality is indivisible. Man may slice matter at his pleasure, but the connection of its parts that can be attributed to ether, gravitation, etc., are never severed or in any way interrupted, whatever significance the division may retain for human action.

If we ask, however, if our analysis must proceed infinitely, it can be replied that any analysis that fulfils the function for which analyses come into being will represent a finite resting place. The mathematical infinite and the transfinite are finite resting-points of analysis. The assumption that it would require "infinite complexity to grasp the real" that sentimental philosophy is wont to make, is merely based on the fact of the formal possibility that there should always be a purpose or attitude demanding a more complex analysis than any given finite analysis, but without empirical fact, it is idle to speculate on the possibility of such a situation. The concept of levels suggests, however, an ultimate pluralism in the sense that different needs can be fulfilled by different types of analysis, for, though scientific needs might be monistically satisfied, the entities built up of lesser entities in the monistic system have, with respect to us, wholly new uses that lend themselves to new types of analysis. An act of theft may have a psychological, biological, chemical, or physical explanation, but it invokes a response from us which is not a response of any of these types, but to the integration of processes that make the theft a new and unique sort of fact in our environment. Instead then of asserting the infinite complexity of the real, we can assert merely that any empirical analysis of reality will be finite, and that, due to the complex possibilities of human behavior, an indefinite number of such analyses may be made and that they are

not necessarily reducible to a single analytic system. They are not contradictory to each other, but rather like divisions of the same material in accordance with different *fundamenta divisionis,* and if taken together, they make a confused mass of cross classifications, some omitting entirely what is fundamental to others and putting first what those consider in the last place.

The question as to the discovery of an ultimate element, then, becomes unimportant philosophically. If the scientists' concepts are the result of a human reaction on nature, the limits to which discrimination and subdivision must be pushed depend upon the closeness of human contact with the kind of facts in question. When our discriminations are adequate to enable us to handle predictively all of the facts with which directly or indirectly we may come in contact, we have elements that are ultimate for that particular branch of knowledge. Scientifically, the character of the processes discovered is infinitely more important than the problem as to whether or no the entities in terms of which they are construed are ultimate. Logically, our task only ends with entities that can be construed as simple, but this simplicity never has any meaning outside of the particular point of view of the logical analysis with which we are at the time engaged.

The scientist is after all much like a map-maker, for a map must be based on an analytical knowledge of the facts of the country mapped, and must have just that kind of relation to the facts that makes its features symbols capable of aiding an engineer about to build a railroad or a general directing a campaign, but no one would expect the country to be constituted of the things found in the map, as a house is built of bricks, or that the things shown by the map had an independent existence, or that they were unrealities; yet in the case of science each of these things has been claimed as a true account of what is denoted by its concepts.

Our answer to the question raised above (p. 59) is now obvious. Atoms, electrons, and the like can not be unreal or they would not possess the value necessary to fulfil their function in a body of scientific knowledge. They are not mere symbols, nor are they independently existing elements brought together to constitute a whole of reality. They are simply phases of physical existence that have exceptional value from the fact that through centering attention on them it is possible to state some process in lawful fashion.

Perhaps the most pernicious error in philosophic thinking, and even in the thought of many scientists, is that separation of matter and energy, which while justifiable in the sense that we can distinguish the shape of an object from its color, and insist that one is not the other, is wholly illegitimate, if we try to think as if the color and the

shape are independent realities brought together in the particular object, instead of analytically derived aspects that have quite different practical values when it is a question of dealing with objects. If scientists have talked about "energy atoms," it is merely because the kind of contact we have with certain phenomena makes it impossible for us to find the "term character" in the source from which changes spread and so the resultant energy factors constitute the sole datum, and it becomes possible to beguile ourselves with the belief that here we have a geniuine disembodied energy.

The scientists' world is the real world, but with a qualification. It is a selected real world according to those aspects which are significant for a certain purpose. Unlike the artist, whose aim is expression, the scientist can not introduce what is not really there into a certain context, but he can preserve in that context only what is fruitful for a certain purpose. He is ever under the pressure of the need of prediction. The map-maker would certainly be wrong if his map did not denote realities, but he would just as certainly be absurd if, because he charted his territory in terms of rivers, mountains, valleys, and plains, he should assert that there was nothing else of which the landscape is made up. There is no such a thing as an atom in just the sense that there is no such thing as a river, *i. e.,* they are not found out of integral relation to other realities.

Our nature determines the constitution of this scientific world merely in the sense that it determines the possibilities of our action. If there could be an organism transparent to solids, but meeting light as a barrier and consequently finding its possibilities of movement in the interior of the planets, it would undoubtedly construe the universe after the model of a Swiss cheese with movable holes, but it would be the same universe that it construed, only the "map" would be made from a wholly different point of view. But a being that has processes of reaction and selective attention like ours must approach any physical universe through selected phases and not meet its continuities with continuities. Given this necessity, in a variegated universe where changes spread, some concepts of matter and energy are sure to arise, where matter is the name for the resting places of analysis, and energy for quantitative correlations of spreading changes among these material "atoms."

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SPIRIT AND MATTER: A PHILOSOPHICAL TRADITION

IF the tendency of the day be, as some have said, an attempt to bring philosophy into closer touch with human life, one of the most characteristic methods in this general movement is the preliminary query addressed to any philosophical problem. Is problem x relevant to our present situation? is it an issue the solution of which is vital for the times? does it find root in some difficulty not yet solved in our social or economic or religious or intellectual life? Or is x merely a survival by tradition, a legacy from our fathers that can liquidate no present debt? Or again, is it a problem antiquated and strikingly barren to-day in form, but to be found relevant enough to the present if given radically different statement and interpretation?

This weapon of what looks like philosophical renovation has been turned most sharply against the problem usually mentioned in the text-books as central in the history of modern philosophy. I refer to the distinction and opposition of spirit and matter, or, more broadly, of spirituality and materiality. Taken as x, the object of the above query, this distinction in the form of an unsolved dualism is becoming discredited as being no longer more than an obstinate puzzle, based on certain premises that must be granted as preliminaries to the game. On the psychological plane, the choice between interactionism, parallelism, automatism as our epistemological theory presupposes and necessitates the preliminary acceptance of the Cartesian or the Lockeian conception of the mind; while on the metaphysical plane, the choice between materialism, idealism, or dualism as our ontological theory presupposes a distinction no less venerable. And such distinctions being no longer true to the character of our social, moral, and religious life, further thinking upon the former is work of supererogation. But a suspicion is aroused: are we condemning really the whole antithesis and its problem to the scrap-heap or do we have in mind what is only a certain phase of it?

Looking at the distinction again, I think we may feel at least two different interpretations of it, a narrower and a broader. If by mind *versus* matter we are thinking of consciousness *versus* body, we are probably right in treating this as a relic of the past, as a mere puzzle. The change to the instrumental and functional viewpoint that has recently come over psychology and its effect upon latter-day philosophic work has been convincing enough. Whether or not we go the full lengths of the "behaviorist," the tendency now is certainly in some such general direction, and "mind" is coming to refer to overt attitudes, conative at bottom, toward the object. The roots of this new position, as they run deep into the social study of men as interactions and associations of objective elements, into the ethics of human

efficiency (however else it be stated), or into the religion that preaches the blessedness of human fellowship in a heavenly enterprise on earth —these roots run too far for treatment here. But now if mind *versus* matter, spirituality *versus* materiality, be taken in the sense not of a distinction between ultimate existences, but as indicating a distinction between attitudes—put plainly, between the interest in ideals and the interest in data—then our whole antithesis has become not a puzzle, but a problem. It is not old-fashioned, but persistent, not academic, but spontaneous. And it is persistent because it is spontaneous.

The movement of thinking inevitably shows different phases, resolvable in the last analysis, I believe, into two fairly distinguishable kinds. First of all, it is obvious enough that the thinking must have some animus, something in the whole setting to start it a-going. If we adopt the old biological phrase of a "lack of equilibrium" this should be freely interpreted to include the subtlest as well as the grossest lack. More important to us than this lack, now, is the desire (tendency, conation, purpose—what you will) to be rid of the lack. But thinking isn't merely set a-going; it isn't an activity maintaining itself in a vacuum. The thinking person must act upon and with something, including the disturbing elements that irritated him into this particular thinking phase. In addition to this direct or indirect objective he must find his fulcrum, he must make use of his other materials as his data and instruments. No advance can be made until he has discovered some tools that will be instrumental in attaining the end. Finally, there must be some sort of an aim or end toward which the enterprise is directed and by which its measure of success may be ascertained. This need not be a conscious end set by the person for himself; it may be no more than the fact of a vague purposiveness evidenced in the persistence of and variation upon unsuccessful behavior and the termination of successful. (It surely need not be emphasized here that this analysis of thinking applies also to organic action or behavior in general—what difference there is is most essentially a difference only of degree.)

Of course, in a given act of thinking there may be, and usually are, other phases beside these; yet these should be sufficient to indicate the two most characteristic elements in the whole movement. There is the element of data (the characteristics and make-up of the specific problem as well as the constitution and behavior of whatever other elements may serve as instruments in reaching the solution), and there is the element of ends (the onward push that has found the obstacle an obstacle and that has urged its circumvention, as well as the gradually articulated ideal that takes form and is the final criterion of success).

To what extent the data are contributed by the extra-organic parts of the situation and to what extent the ends are contributed by the organic, are questions that need not delay us just here. That we experience every day the resistances and caprices of a somewhat alien-seeming environment and contrasted with this the hopes and ideals that spring eternal in the human breast, is of course well known. But the distinction between environment and human breast is a loose one; the resistances and caprices may not in every case be due to extra-organic sources; even the hopes and ideals are often created and nourished by an objective world that is suggestive and friendly.

The distinction of attitudes I have pointed out may be a little clearer if we hold up in comparison two of the Ancients. Democritus and his atomism, with the analysis of the familiar, but difficult wholes into the unfamiliar but easily calculated parts—this man is surely the type of the species of thinkers that ever since has been devoted to analyzing as impersonally and disinterestedly as possible the structure and behavior of the world we live in as well as of ourselves. He was interested primarily in description, in discovering the *what* characters. His contemporary, Plato, typifies well the interest in the ideal. It was not for his poetic soul to calculate what an object was composed of, but to wonder what it meant, what it was for, what end it served. And this interest in the ideal is shown the better just in that he did not inquire only after the immediate and every-day practical ends of the object concerned, but also after the higher ends that could be discerned through the object and its connections and relations to the rest of experience. A fair form was not a superlative degree of anatomical perfection, not a complex of eminently correct surface, lines, and colors, but a blessed thing which by its very nature shadowed forth something of that Beauty which remains for us ever a goal and end, never a completely adequate realization.

For the consideration of these two Greeks and their contrasted interests the corollary would not seem too bold that the philosophy of a man, school, period, or people, is colored fundamentally according as it emphasizes either of the two interests. Galileo's physics, Hobbes's psychology, Descartes's natural philosophy, all show attention to data and material. Here the interest is in learning the definite constitutions and modes of activity of the surrounding world. From the objects of more immediate use and more pressing need, the field of scientific attention has gradually widened to include the minute study of things strangely remote from bread-and-butter considerations. Everything has been standardized, codified, formulated, until the symbolic shorthand expressions for their behavior have for some assumed an appearance of deadness and meaninglessness. On the other hand, the Church Fathers, the Scholastics, Berkeley, Kant,

Fichte, Hegel—all these are more interested in the direction and portent of the data already found than in the finding of the data. The Schoolmen were primarily and almost exclusively concerned in the heavenly world as a world of future aims for present endeavor or of future standards for present behavior: heaven they acted for, earth they acted with. The other men named show how romantic tendencies are ever irrepressible. There have always been spirits pulsating with the overflow of life and with a vivid sense for movements and directions in human action and thinking. But sometimes the exaggerated individualism in the air has given the romantic thinker a strikingly ego-centric perspective, and the world is interpreted then as a part of his own purposive life; sometimes his historian's sense has led him to read his idealism in larger terms, and the world of nature becomes the physical expression of a great onward-moving Spirit or Purpose. Ever and anon we find this tendency to read nature in terms of human ends. In contrast are put often the Nineteenth Century Americans: not that they were the opposite of the "holy" in being the "wicked," but that they were the opposite of the "spiritualistic" in being the "materialistic," engrossed as they were in exploitations of their yet unfathomed natural resources and in considerations of the primary needs of the economic man.

It seems inevitable that the values found in human life get classified into either the "material" or the "spiritual." Let me take Plato again for an illustration. How far he personally was responsible and how far his historian-interpreters is unimportant now; but we may say certainly that the Platonic tradition shows an exaggerated distinction between the material and the ideal, and an hypostatization and apotheosis of the latter at the expense of the former. The purposive aspects were abstracted from the non-purposive in immediate experience and given new organization as a separate realm. The result was an ontological dualism, a world that merely *is* and a world that *ought* to be. (Now, even if we were to grant the validity of drawing the distinction this way in terms of existence, we should still want to ask, *is* there a single world that ought to be? Is it not rather a matter of manifold different details that ought to be, but not grouped into a single system and not susceptible of such grouping?)

It would seem that such a distinction in terms of existence was simply following the psychological truth that any object of great interest and attention tends to objectify itself in a more hardened and immobile form than as first conceived. Paranoia is only an extreme form of a common human tendency. If you hold fast to some all-sufficing aim, shaping all actions in the direction of its realiza-

tion, and making all else fall into that one perspective, it is not long before that ideal somehow seems able to stand alone without the pedestal that your personal life has really formed for it.

And this is true not only for private life, but for the collective thinking of social aggregates. Professor Cooley has called attention to the effect of institutionalizing private ideals. "Human-nature values, seeking realization through a complex social system, are led to take on organization and an institutional character which carries them far away from human-nature and in time calls for a reassertion of the latter." "An idea, in becoming institutional, merges itself with the whole traditional structure of society, taking the past upon its shoulders, and loses much of the breadth and spontaneity of our more immediate life."[1]

As a consequence of the natural tendency of man to generalize his occasional and incidental distinctions and then to hypostatize the resulting generalizations, we see running through the history of European thought varying conceptions of an ontological dualism. Whether we take the Stoic division of existence into the world and its pneuma, the Scholastic division of the world of the flesh and the world of the spirit, the Cartesian disparateness of thought and extension, the Kantian and Romanticist re-reading of the phenomenal world in terms of a deeper spiritual, the Hegelian and neo-Hegelian interpretation of world history as the manifestation of spirit's self-development, the tendency observable in certain quarters to-day to discount the external world in favor of "true inwardness"—in all these dualisms we may discover not uncommon starting-points. Their divergences are due to accidents of social situation, intellectual heritage or individual temperament. That they spring from much the same generic kind of personal life may be seen by careful consideration. Aside from the accidents just named, which go in to color largely the specific experience of a given individual, general characters both of crude human experience and of human reactions thereupon are discernible.

Now, what I want to point out here particularly is that universal character of experience that is best called, I suppose, by the term values, and also the universal form in which value-situations are organized.

Were it possible to make a cross-section of daily experience, taken anywhere you choose, examination of this upon the slide would reveal at once a dual nature. Any moment of life is a moment of *life* just in so far as it holds within its complex web a warp of meaning for the woof of bare fact. No bare existence *per se* really ever attained unto

[1] C. H. Cooley, "Valuation as a Social Process," *Psychological Bulletin*, Vol. IX., pp. 444, 445.

existence in any intelligible sense of the word; to be part and parcel of a world of any kind, from the most indisputable set of facts to the idlest fancy, there must be a core of active concern and indeed a face with some sort of character. We are not born into a world of indifference; whatever in it is completely indifferent is not in any sense *in* that world. The horizon of any child circumscribes only those elements that present themselves to his senses and imagination in relevant shapes, be they importunate or casual, immediate or distant, vividly exciting or refreshingly soothing. The moon, far from being an absurd 240,000 miles away and with influences upon human life of only minor importance, is an object than which nothing can be more entrancing and desirable. The pencil point between the lips may be quite lacking in nutritious capacity in the adult way of judging, but it suffices to awaken that *rapport* between life and its other that carries its own sufficient justification and only by grown-up psychologists is to be labeled a reflex action. Then, as the individual ages, as he comes into fuller shares of mankind's cumulative experience, constancies of meaning come to be established. The moon more and more definitely takes unto itself a certain aloofness, a certain unimportance, that increases in varying degrees and in varying periods; reversed substantially only in the adolescent period and thereafter lapsing again, unless given new content and meaning by being worked into a system of knowledge like astronomy which on new accounts serves to keep its reality and presence duly impressive. Experience, being a teacher, teaches one to discriminate more and more accurately and effectively. The pencil point, too, gradually is uncovered in its treachery, and if it persists as an object at all, persists as a nuisance.

Closer analysis of this natural history of man's "existential universe of discourse" reveals a continuous blooming out of each other of situations apparently dual in content, as I have brought out on preceding pages; or, if you prefer to indicate and emphasize the experiencer as an element, triangular in pattern, the angles of which represent the three factors, *agent, data,* and *end.* Any personal situation may be thus schematized.

Not only a life as a whole, but every incident in that life is given its phrasing by intent and purpose, by striving and seeking. And this general organization when analyzed betrays three separate factors. The subject of the experience, the "mind" involved, may be taken as the central agent, furnishing the ground of connection between the other two. But the central agent must have his materials, his fulcrum or lever, his more or less raw "givens," with which he is to operate and out of which he is to fashion if possible the full embodiment of the end. In the third place, the end itself must after

some fashion be envisaged, and, however schematic in outline, must serve as the goal of the remaking process. The experiencer, then, is confronted constantly by conditions of the present that call for reshaping and manipulation to accomplish a more favorable state. Daily life is a continuous story of our seeking a more satisfactory state of affairs by doing something with what we already possess.

But I fear the figure of the triangle I have suggested is not altogether apt, and the dangers into which it may lead the unwary may well be pointed out, especially since their statement serves at the same time to reemphasize important features. In the first place, there is lacking the sense of movement so essential. If the end or ideal is to function as such at all we must have a tendency or impulsion in its direction, an active desire not so much perhaps to make the ideal actual as to bring the actual to the ideal. Again, three corners of a geometrical figure are as such so spatially disposed that one is led to expect in them and their relations an immutable fixedness; whereas the interchangeability of the rôles of data and end, the capacity of a million dollars, for example, to be treated either as the immediate object of seeking or as the means for obtaining some further good, is actually fundamental not only to the character of a single cross-section of life, but to its consistent self-evolving. In the third place, the figure is likely to be inapt unless we imagine it in the very crude form of a triangular raft on rough water that often shows all three corners above the surface, but on many occasions suffers different ones to vanish from sight. Which is by way of saying that to have a genuine manifestation of purposive life the three indicated factors need not be clear and explicit. If the building of air castles, for example, is supposed to be purposeless, it is simply because the factor of ideal being exaggerated and that of present conditions suppressed, the dream gets nowhere appreciably. On the other hand, those innumerable things we do daily with conscious knowledge, but without knowing just why, exhibit recognition of the minimum of end with moderate degree of present conditions. And again, the pursuit of the end in view may become so absorbing that the relationship of the whole dynamic experience to the organic agent may be all but lost sight of; and the present conditions seem almost to be evolving to their proper goal just of themselves and without needing us to pose as their engineer.

These are the essential and characteristic factors present in the world we live and act in. When we speak of experience, we must recognize the presence and interaction, *in some sense*, first, of a set of conditions that are never quite satisfactory; secondly, of an end or ideal set of conditions in terms of which the improvement of the former is to be brought about; and thirdly, a central agent, organic

in type, whether in the form of "individual," family, club, profession, sect, race, or nation. Without any one of the three the whole is rendered meaningless.

In criticizing my own figure of the triangle above I have touched on the relativity of the distinction between data and ends, by indicating the frequent interchangeability of their rôles. A further point may be added in this connection to the effect that the relativity of the distinction would and does argue for a basis in common. In fact, this is the bond of relation between them; it is the bond of import or leading, which is espied or felt in some particular details or some general aspects of the given and which suggest in some more or less forceful way the possibilities that go in to constitute the ideal now outlined. Those environmental details that possess the pregnant character of suggestiveness come naturally to claim the focus of attention; and the other details are content either to announce themselves as in or out of harmony with the suggested plan (*i. e.*, as helpful materials or as hindrances) or to hide their unimportance by dropping out of sight and consideration.

Thus we may say that among the dynamic and vacillating details and their interrelations that constitute the wealth of an immediately or naïvely experienced environment, there are to be discerned many features that are weighty with human significance, while the others are (comparatively) dead, cold, hard.

And now we are back again at the beginning of this paper! To the discriminating mind—and every mind is in very nature discriminative—the content of life yields something of a double character, the spiritual and the material. In so far as we stress the elements of value and purpose, of ideal and end, we are emphasizing the *spiritual* phases; but when we limit consideration more strictly to the less attractive and exciting, but more calculable and tractable, we are attending to the *material* phases. To put it again in terms of attitude, we have here distinguished the interest in *ideals* (or the standards and guides to our endeavors) and the interest in *data* (the starting points and the raw materials of our efforts). Plato and Democritus I have used as examples of the two emphases.

If, perchance, any readers regard some of the foregoing as a fable, let me then at least recommend its moral. The well-known tendency of human thinking to petrify its objects is nowhere shown more clearly or sadly than here. In the fields of religion particularly we may often witness the emotion-impelled thinker piecing together the spiritual aspects of life as they are naturally manifested on occasions, to form a coherent one-piece structure. The relative, changeable, fluid, dynamic values of life are torn from their normal connections and ascribed an absolute, stable, static character. And bad as this

appears to intellect and theory, it is especially unfortunate for practise. When extracted from their natural setting these spiritual phases of experience are deprived of their proper functions; or better, when hot enthusiasm and incidental imagery have fashioned out an independent realm of the Spirit, there is an inevitable backward discrediting of the more prosaic, but less fictitious values in every-day living.

Instead of keeping ourselves attentive and ready to work out and appreciate to the full all the suggestions of a better living that run through daily experience, we find ourselves committed to an ontological dualism. The need, then, hardly calls for restatement; it is not so much for an injection of a foreign spiritual something into the material, nor a justification of this immediate world by contorting it into line with an other-world perspective, but a rediscovery of the beautifuls and goods and desirables within the present, given existence. And this is only to rediscover what was always felt, but what has been so frequently symbolized and resymbolized that form has hidden gist, that imaginative and poetic incrustations have hidden the original living essence. Thinking man with his playful fancy and his ponderous intellect needs constantly to keep alive a sense for the vital in his values.

And now in a nutshell: The traditional problem of spirit *versus* matter may be given vitality by being taken in a larger sense as the spiritual *versus* the material, for this distinction is found rooted in a natural, but relative distinction within the growth of any human experience, whether taken in terms of interplay of thinking processes or of the interrelations of experienced content. It is the distinction between the data of immediate and imperfect environments and the ends of remote and desirable conditions yet to be effected. How it easily becomes exaggerated is shown in the history of philosophy and even to-day in many philosophic and religious conceptions. To be vital, however, the category of the "spiritual" must be kept elastic and applicable directly to the absorbing, but changing values of purposive living.

JOHN FREDERICK DASHIELL.
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SOCIETIES

NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences, on November 27,

at Columbia University. Following are abstracts of the papers presented:

Echolalia in Idiots: Its Meaning for Modern Theories of Imitation. Dr. L. S. Hollingworth.

Echolalia (which is a curious tendency, found in aments and in certain insane patients, to echo or repeat whatever is said to them or in their hearing) has occasionally been described in the literature of pathological psychology, notably by Barr. The present paper describes three cases of echolalia in idiots, one case being a child of five years, the second, a child of eleven years, and the third, a man of about thirty years. These patients showed a marked ability and tendency to repeat automatically whatever was said to them, revealing no understanding of the question-response situation. Instead of replying to questions, they simply repeated them mechanically.

Such cases are of great interest in connection with modern controversies about the nature of imitation in man. Professor Thorndike has recently called into question former ideas about imitation, and has debated the propriety of its inclusion, as a general tendency, among the instinctive tendencies of man. Professor Montague has made persuasive objection to Professor Thorndike's discussion and final conclusion, holding that the potency of behavior to produce similar behavior in witnessing human beings, can not be satisfactorily explained on the ground of a few specific inherited tendencies plus the laws of habit formation in general.

Does the behavior of our three idiots furnish any new light to the controversy? It would be desirable to have much more information about the development and the modifiability of the echolalia which they showed. However, it is very difficult to see how their tendency to duplicate behavior experienced is to be explained except on the basis of instinctive imitation. The patients were idiots, incapable of adapting themselves independently to even very simple situations, or of understanding the significance of what was said to them. Their "echoing" would seem to be inexplicable by the laws of habit formation in general, or on the basis of any specific inherited tendencies. If we explain the behavior of such patients as due to an instinctive tendency to imitate, shall we assume that they suffer from some characteristic lesion which sets them apart as a separate species? Or does their reaction indicate the presence of an instinct which is an element in the original nature of man, and is distributed according to the curve of probability? (To appear in full in the *Journal of Educational Psychology,* May, 1917.)

Shrinking of Images. Dr. G. C. Myers.

Eight graduate students of Columbia University, under certain

standardized conditions, cut threads which represented one of two dimensions of some familiar object voluntarily selected which could not be seen during the experiment. These threads were placed between the pages of a magazine where the date and introspections were recorded. One subject first imaged tactually then visually; the rest, as a rule, imaged visually. Some imaged once a day, some twice, and some three times until they each had about fifty records. Later these threads were measured in millimeters by the writer.

Four other subjects thus imaged ten familiar objects successively for six continuous hours, of whom two selected later an arbitrary thread length and repeatedly cut threads for one hour to equal the memory length of that thread. Five more did the same for one half hour. Twelve subjects for one hour each also imaged an object which had been presented before the experiment began. Its dimensions were 228–44 mm. Those dimensions which were voluntarily selected ranged from 34 inches to about one inch.

Curves were presented of individuals, and of the group of twelve. Although there were considerable individual differences there were no exceptions to the rule that the general trend of the curve was downward. Most resembled the learning curve. The curves for length and width were remarkably parallel. The size of the objects imaged as a rule were greatly underestimated. This was only a preliminary report.

A Comparison of the Binet-Simon Tests of Intelligence and the Squire Graded Mental Tests. Dr. J. C. Bell.

The Binet tests have been criticized because of the trivial nature of some of the tests, the arrangement of the tests, and the principle of mental age. The Squire tests were constructed with greater regard to psychological analysis, but have been used as a graded series only by Squires herself. It was proposed to investigate the relative values of the two series of tests for school purposes. Both were given to twenty-three elementary pupils in grades four to seven, inclusive, three from each half grade except the high seventh, where only two were available. No retarded pupils were included. By the Binet tests the mental age of the pupils ranged from one year below their chronological to four years above. To reduce the results of the Squire tests to a single expression for each pupil, the highest score in each test was placed equal to 100, the lowest equal to 0, and the other scores were reduced to corresponding values. The results for each individual in the eighteen tests were then averaged for a final score. The Pearson coefficient of correlation between these scores and the Binet mental ages was .70. The Binet tests were found superior because they could be given in one fourth the time required

for the Squire tests, because the interest of the pupils was maintaind at a higher pitch, and because the results were more easily interpreted.

Psychological Analogy in Political Theory. DR. J. P. TURNER.

(The reading of this paper has been postponed until the February meeting.)

A. T. POFFENBERGER, JR.,
Secretary-Treasurer.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Fortschritte der Psychologie und ihrer Anwendungen. Herausgegeben von DR. KARL MARBE unter Mitwirkung von DR. WILHELM PETERS. Vols. II.–III., Hft. III. Pp. 371, 184.

In these numbers of the *Fortschritte* we may notice a few of the more important communications. In Volume II, pages 1–133, Stoll presents an elaborate analysis of the errors in writing. Twenty-seven members of a seminary copied texts for an hour and seven minutes, and the results furnished the material upon which the study is based. In general it was found that the sources of error were due to the relative frequency of the words, to inhibition of the Ranschburg type, *i. e.*, inhibition of similar sounds and meanings, to perseveration of words or parts that had been written or that were to come, and upon the introduction of associated ideas. The relative frequency of each of these causes follows the order named above. Inhibition accounts for most of the omissions; the replacement of a more usual for a less usual word for the substitutions; and perseveration for the greatest number of additions. It is a careful and suggestive piece of work.

In Heft II. of the same volume, Pick cites three pathological conditions that bear upon psychological problems. One gives an account of two women who showed what he called negative abstraction, failure to observe and to recall all but a single element in any object, in this instance its glitter or sheen. A second he interprets as showing that the impersonal sentence really has a subject in some conjectural force or capacity from the fact that certain patients always used it to describe their acts when they did not themselves feel responsible for them. They referred them to some force active within themselves. In a third he traces instances of plagiarism in certain pathological states to a failure of recognition of the material that is recalled.

Von Frey in the same number gives a summary of the present

status of cutaneous sensation that serves admirably to bring together scattered work. Peters and Němeček report a study of the influence of affective tone upon recall. In general they found that seventy to eighty per cent. of the experiences recalled had an affective tone at the time of the event. A slightly greater number of pleasant than of unpleasant experiences are recalled, and in the recall there is a tendency for the unpleasant experiences to take a pleasant character or to lose affective tone. Evidently memory has an optimistic trend.

Heft V. contains two articles: One by Prandtl reports a series of experiments in selecting the important geometrical elements in pictures. In the midst of variation there seems to be agreement among the observers as to what the prominent forms are. It is argued that the method offers a means for determining the formal elements in art. Marbe in a second article gives a full description and history of the psychological laboratory at Würzburg.

In Heft VI., Hacker reports the results of injecting antikenotoxin upon the capacity to work. It was hoped that it might lessen the effects of fatigue, but the results were largely negative. Caffein increased the capacity in practically every case, but antikenotoxin was without influence.

Vol. III. begins with an article by Marbe defending the results of his early investigation of judgment and showing its relation to the imageless thought controversy that has followed it. He claims precedence over the Würzburg school and Binet in appreciating these elements, but asserts that they have long been recognized in psychological discussions, that the new discovery will not work the revolution that has frequently been prophesied for it, and that even if the association psychology must be modified in the light of the recent results, it is not yet time to discard the older laws altogether.

In Heft III., Römer reports results of association tests of backward children. The only difference in the associations that correlated with the intelligence was a gradual increase in the percentage of common associates with mental age. The more retarded or lower cases merely repeated the word or gave words with similar sounds or completed words or phrases. The author suggests that the number of common or preferred associates might be used as an indication of the intelligence.

In Heft III., Sommer reports observations upon the methods used in training the Elberfeld horses. He observed for a day (two lessons) the procedure employed by Herr Krall in establishing the simple associations in an untrained horse. Sommer is of the opinion that the results depend upon the slow establishment of simple associations between the symbols and sounds and the movements that are employed for expression. The process is similar to one used by

Sommer in the training of defective children and he believes that all of the results, even the extraction of roots, can be understood in that light.

It is evident from these selected articles that the Fortschritte continues its early high standard in the quality and variety of articles that it presents and must be assigned an important place among current psychological publications.

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Bodily Changes in Pain, Hunger, Fear, and Rage. An Account of Recent Researches into the Function of Emotional Excitement. WALTER B. CANNON. New York and London: D. Appleton and Company. 1915. Pp. xiii + 311.

The results of Professor Cannon's investigations are already familiar to the readers of this JOURNAL. Previous experimenters had shown that fear, anger, and pain inhibit the flow of gastric juice and saliva; Cannon found that stomach contractions were also inhibited by these experiences. He and his pupils have demonstrated that such excitements increase the discharge of adrenin into the blood, and have confirmed the suggestion derived from other investigators that emotional excitement increases the amount of blood sugar. They have shown that in pain and emotional excitement innervation of the sympathetic nervous system, "probably aided by the adrenal secretion simultaneously liberated," affects the blood pressure in such a way that the blood is driven out of "the vegetative organs of the interior, which serve the routine needs of the body, into the skeletal muscles which have to meet by extra action the urgent demands of struggle or escape," and the heart, lungs, and brain whose activity must also be increased. They have experimentally demonstrated that adrenin counteracts the results of muscular fatigue by an influence not wholly derived from its effect on blood pressure, and have shown that it produces faster coagulation of the blood, an assertion previously disputed. The general conclusion which is obviously indicated is that emotional excitement serves a purpose of great usefulness to the organism. Sugar, the fuel needed for intense bodily exertion, is automatically poured into the blood; the supply of blood is sent by the change in blood pressure where it is most needed; muscular fatigue is counteracted and the danger of bleeding to death from wounds lessened by the action of adrenin on coagulation.

The chapter on hunger is a less essential part of the main argument of the book. It reports an experimental proof of the fact that the sensation of hunger is occasioned by the contractions of the empty stomach.

While the demonstration that the physiological effects of pain, fear, and rage are of great service to the organism in times of supreme stress is of deep scientific interest, its immediate appeal is to the physiologist and biologist. More directly the concern of the psychologist is the chapter on "The Interrelations of Emotions." The author points out that the opposition between the functions of the middle or sympathetic division of the autonomic nervous system and the two distal divisions, the cranial and the sacral, is reflected in an antagonism between the emotional experiences expressed through these divisions. "The cranial autonomic—is concerned with the quiet service of building up reserves and fortifying the body against times of stress. Accompanying these functions are the relatively mild pleasures of sight and taste and smell of food. The possibility of existence of these gentle delights of eating and drinking and also of their physiological consequences is instantly abolished in the presence of emotions which activate the sympathetic division" (p. 268). In like manner the sexual emotions, depending on the sacral division, are abolished by pain, fear, or rage.

The author concludes from the similarity of the visceral effects of rage and fear that visceral influences are too undifferentiated to account for differences in the felt quality of emotions; and adds this consideration to Sherrington's observation that dogs with the visceral influences eliminated showed characteristic facial and vocal evidences of different emotions, as proving the relative unimportance of the visceral factors for the psychology of emotion. It should be carefully noted that this does not in the least mean an overthrow of the James-Lange theory of emotion. According to James and Lange, the emotion is caused by motor phenomena occurring not only in the viscera, but in the skeletal muscles as well. It may well be urged that in so far as the visceral disturbances get the leading rôle in very violent emotion and are uniform for different kinds of emotion, just so far do the different kinds come to feel alike and really to be the same emotion. As for Sherrington's dogs, rage in a normal dog, it may be argued, consists in the sensations from visceral changes, from facial expression, and from barking; if the visceral changes are prevented from occurring, the fact that the other motor effects persist does not prove that the dog's subjective state is just what it would normally be. To assume that because the dog can still bark, the subjective condition of rage is present unaffected by the loss of visceral influences is to assume, not to prove, the very point which the James-Lange theory would deny, namely, that a motor process like barking is merely an effect of a preexistent subjective state of emotion, instead of being one of the causes of the state.

MARGARET FLOY WASHBURN.

VASSAR COLLEGE.

Il Nuovo realismo in Inghilterra e in America. A. ALIOTTA. Prato: "La Tipografica." 1915. Pp. 114.

This small volume is a very interesting; and, in many respects, a valuable contribution to contemporary philosophical literature. It deals with American new realism, which it studies in its sources and in its doctrines, showing, with unusual acumen, its merits and its shortcomings.

The book is divided into three parts. The first part deals with the forerunners of the new realism, especially with Moore and Russell, whose doctrines are accurately exposed in all their forms and ably criticized. In the second part, we are directly introduced to the American new realists. The author does not limit himself to giving an account of their philosophy. He shows their place in the history of modern thought, and contrasts their doctrine with that of the neighboring schools. We learn from his book what the realist owes to the idealist. We realize that modern thought has been modified by the idealistic current to such an extent as to compel the new realists to differ from the ancients in many essential points. Here, also, the author touches upon pragmatism, and shows how it agrees with realism in many respects, differing from it in this essential characteristic that, for the realist, consciousness, although active, does not in any way alter reality.

Not less interesting is the third part of the book, in which the author gives his own criticism of the realistic philosophy. His strongest objection seems to be the excessive pluralism to which realism condemns itself, having rejected all principles of unity, and thereby made impossible any explanation of the genesis of our experience. It may be doubted, says the author, whether the universe is one single system; but no realist can deny that partial systems exist, although their existence is for him a mystery.

In point of fact, the author sees three mysteries in the new American realism: how consciousness can arise from the chaos of external reality; how the unity of the subject can arise from the plurality of phenomena; how an activity can be conceived, which does not alter reality (p. 105).

A fairly complete bibliography of the new realism is appended to the volume, and makes it a useful book of reference.

J. L. PERRIER.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

JOURNAL OF EXPERIMENTAL PSYCHOLOGY. October, 1916. *The Existence and Function of Inner Speech in Thought*

Processes (pp. 365–392): H. B. REED.—The purpose of the investigation was to discover the functions of inner speech in the thought processes, particularly in the apprehension of meaning. The conclusions were: inner speech is not a universal, but an individual trait; inner speech has no important function in comprehension in reading, and in writing, or in the rate of reading and writing. *The Mnemonic Span for Visual and Auditory Digits* (pp. 393–402): ARTHUR I. GATES.—Coefficient of correlation of visual and auditory forms of tests was .625, when the span was taken as basis of comparison, and .225 when the exposure series surpassed the span. The average span for college students was approximately 8.2 digits when the visual methods of presentation was employed, and 7.7 digits with the auditory method. Increasing the number of digits exposed beyond the span decreased the number of digits that can be recalled, this decrease was greater when the auditory method of presentation was used than when the visual method was employed. *The Correlations between Different Memories* (pp. 403–418): FAYE BENNETT.—The purpose of the investigation was to determine the correlation between immediate and mediate retention for auditory and visual presentation with various sorts of material. Nouns presented visually for mediate learning show the highest of the correlations with other memory functions tested. There is a high correlation between mediate and immediate retention of sufficient number and variety of measurements for each type of memory taken. *The Effect on Foveal Vision of Bright Surroundings,* III. (pp. 419–425): PERCY W. COBB.—Previous reports gave results relating to the brightness-difference threshold which lacked in definiteness. The reason was due in part to the form of apparatus used to furnish the test-stimuli. This paper describes a modification of the apparatus used by which those defects were overcome. *On Color Induction with Reference to Color Recognition* (pp. 426–453): MARY ALMACK and G. F. ARPS.—When the after-effect of a primary stimulus is similar to the color of the disc the limen is the lowest of the five limens for this color. When the primary stimulations are not complementary to the secondary stimulations the influence of the effects of primary stimulus upon the recognitive limens of the secondary stimuli is more difficult to trace. *Apparatus and Experiments for the Introductory Course* (pp. 454–459): HOWARD C. WARREN and PRENTICE REEVES.—A description with illustrations is given of (1) a combined tilting board and rotation table and of (2) a size-weight illusion experiment.

De Amicis, Edmondo. My Last Friend Dog Dick. Tr. by J. G. Lista. Boston: The Alpine Press. 1916. Pp. 35.

Evans, John E. The Effect of Distraction on Reaction Time with Special Reference to Practise and the Transfer of Training.

Archives of Psychology, No. 37. Edited by R. S. Woodworth. New York: The Science Press. 1916. Pp. iii + 106.

Frank, Henry. Psychic Phenomena: Science and Immortality. Boston: Sherman, French, and Company. 1916. Pp. 556. $2.50.

Freud, Sigmund. The History of the Psychoanalytic Movement. Nervous and Mental Disease Monograph Series, No. 25. New York: Nervous and Mental Disease Publishing Company. 1916. Pp. iii + 58.

Leuba, James H. The Belief in God and Immortality: A Psychological, Anthropological and Statistical Study. Boston: Sherman, French, and Company. 1916. Pp. xvii + 340. $2.00.

Le Bon, Gustave. The Psychology of the Great War. Tr. by E. Andrews. New York: The Macmillan Company. 1916. Pp. 480. $3.00.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held on Monday, December 4, 1916, Dr. H. Wildon Carr, president, in the chair. A paper was read by Dr. Bernard Bosanquet on "The Function of the State in promoting the Unity of Mankind." Dr. Bosanquet said, that the essence of the Greek and German theory of the state has been much mistaken by recent critics, although it has been rightly explained by English thinkers (*e. g.*, Green and Lord Haldane, in the Montreal address).

1. The so-called absolutism of the state is merely a caricature of the unique relation between a man and the community with which his will is united, especially in so far as it provides an adjustment of all practical relations.

2 and 3. Speaking of "States" instead of "the State" has soon revenged itself; all the critics speak of states in terms of those defects which it is their inborn function to abolish.

4. Essentially, according to the theory, as having the same task in different territories, states are cooperative. War, as Plato showed, is rooted in their disease. Their function is the organization of rights.

5. The State, then, is a moral being with a conscience, and when its conscience is perverted, will fight for the wrong as its right. But it is a poor way of ensuring peace to deny its conscience under the name of "absolutism" instead of trying to provide for its enlightenment. Yet this is the critics' line.

6 and 7. It is true that the moral position of the state is not comparable to that of a private person, and this view is described as absolutism from unintelligence of what constitutes a moral situation and duty.

8. As to wider loyalties and units than that of the nation-state. There *is* no being like the Comtists' "humanity," and humanity as a quality belongs chiefly to exceptional communities.

9. Wider communities than the nation-state may be possible; but only if they fulfil the same condition of unity, *viz.*, a general will. Without this, all leagues, federations, *etc.*, are mere force and dangerous, and with it, hardly necessary. The true outlook for peace is to the removal of causes of discontent by organization at home; especially by freedom of human intercourse and absence of privilege. World-wide human relations are no reason for world-wide political units. A system of states each well organized at home might be just as peaceful and much more valuable, compared with a world-state. To doubt this is to harbor the barbarous suspicion which is a cause of war.

The idea of a political community of humanity incapable of war, is mixed up with millennial superstitions, and withdraws our thoughts from the true line. This is, not to disparage the state, but to see that it completes its work of organization, by which the seeds of war are killed.

In the discussion which followed Mr. Bertrand Russell maintained that the state was not an end in itself, and as an institution did not promote the highest ends. For example, anything touching religion has to be individual in order to be sincere. The essence of the State is a certain limitation of freedom, and the best people in the community ought not to be controlled by the State. Lord Haldane contended that the State must reform itself from within, and that State reform could not be looked for from federations without. Professor J. A. Smith defined the State as the only form of human association which expresses a general will of its members. It was the peculiarity of the State to provide the conditions of the best life, not the best life itself. Professor J. S. Mackenzie criticized the term "general will." He would prefer to speak of a general system of valuation.

Dr. Roswell Angier, assistant professor of psychology at Yale University, will, during the second half year, give at Yale University one of the courses given by the late Hugo Münsterberg. The other courses will be given by Assistant Professor H. S. Langfeld and Dr. L. T. Troland.

At the University of Washington, Dr. Leonard V. Koos has been made associate professor of education, and Dr. Clifford Woody has been appointed assistant professor in the same department.

Mr. B. F. Pittenger, who was appointed associate in education at the University of Illinois for the current year, has accepted a position as adjunct professor of education in the University of Texas.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

DOES HOLT FOLLOW FREUD?

HOLT'S recent volume, *The Freudian Wish and its Place in Ethics,* offers several points of interest. In the first place it shows that there is at least one psychologist in this country who, having had no first-hand acquaintance with Freud, yet has the courage to treat of Freud's place in a general system of psychology. In America there has been a Freudian cult—a shrine of worshipers made up of a few who have sat at Freud's or Jung's feet for some weeks or months. Returning to this country, these individuals have made it plain that the principles of Freud are not open to discussion by less favored mortals. Many of us have ventured to believe that even a mere psychologist can understand the essential nature of the Freudian mechanisms and that he can give them their place in the whole scheme of psychology. But we have been handicapped in our efforts to reach this goal by the lack of open discussion in our psychological journals. And the journals have been closed because no psychologist hitherto has had the courage—in the absence of hospital experience—to run the chance of non-profitable criticism at the hands of the favored few. This small band which has set itself up as the true exponent of Freud has done more to retard the broad understanding of that investigator than has the rather unfortunate way in which he himself has couched many of his illuminating principles. Holt's book will go far both towards breaking down the narrow and bigoted method of discussing Freud's theories and towards undermining the evil influence which his too particular adherents have exerted in this country.

Holt's praise of Freud is certainly unduly extravagant. After suggesting that Freud's contribution to science is epoch-making, he says: ". . . He has given to the science of mind a 'causal category'; or to put it less academically, he has given us a key to the explanation of mind. It is the first key which psychology has ever had which fitted, and moreover I believe it is the only one which psychology will ever need." The remaining part of the review will attempt to give Holt's justification of such praise.

Freud's key to the mind is called the "wish."[1] It is this wish which according to Holt transforms the principal doctrine of psychology and recasts the science, much as the atomic theory and later the ionic theory have reshaped earlier conceptions of chemistry. "This so-called 'wish' becomes the *unit of psychology, replacing the older unit commonly called 'sensation'* (italics mine); which latter, it is to be noted, was a *content* of consciousness unit, whereas the 'wish' is a dynamic affair" (p. 47).

Holt, in the chapter on the physiology of the wish tries—not wholly successfully—to come to closer quarters with the wish. He comes out with a conception of the wish which is wholly acceptable to a behavior psychology, but it is not Freud's wish. The wish Freud deals with is never defined, whether in psychological or biological terms. In certain places in Freud one gets the notion that he might be willing to see the wish expressed in terms of the reflex or in habit terminology, yet one must finally arrive at the conclusion that Freud never had any particular interest in working the wish out biologically or connecting it up with the well-known principles of habit formation. The wish remains for Freud a kind of mystical entity—a kind of disembodied ghost which arises to terrify the possessor, not once or twice, but continually. The non-biological or mystical nature of the wish has been even more clearly expressed in the writings of the colleagues of Freud. For example, in Jung's recent book on the unconscious the libido has become a kind of psychic energy—the amount of which in a given individual remains fairly constant, since if there is a lack of libido in one department of life, there is a too great supply (compensation) elsewhere. The wish becomes here little less than an *entelechy*—undisguised by even the thinnest biological raiment.

To bring the wish into agreement with a reflex or objective psychology has seemingly been Holt's chief undertaking, but yet he fails sadly in certain places in remaining objective. Disregarding some of the terminology which belongs to the realistic movement, he talks in general the language understood by the behaviorist. For him the wish includes whatever would be called an impulse, tendency, or attitude. "An exact definition of the 'wish' is that it is a *course of action* which some mechanism of the body is *set* to carry out, whether it actually does so or does not"[2] (pp. 3 ff.). In the chapter on the Physiology of Wishes he takes up the reflex arc con-

[1] Of Holt's facile and easygoing presentation of Freud's general theory I shall say little. The first chapter might serve as a good introduction to Freud and one safe enough to put in the hands of even elementary students.

[2] If the "wish" is the *key* to psychology and this is a definition of the wish I fail to see why the key has not been in the hands of psychologists since the time of William James.

cepts and lays the basis for his later discussion of the way "wishes" affect conduct. His criticism of the Meynert scheme and subsequent rewriting of it gives the closest approach to the central part of Holt's book. I quote him in some detail: "An interesting problem of a partially conflicting sensory pattern is 'the Meynert scheme' of the child and the candle-flame, which has become generally familiar owing to its having been quoted by James (*The Principles of Psychology,* Vol. I, pp. 24–7). Meynert aims to show by a diagram how a child learns not to put his finger into a candle-flame. Two original reflexes are assumed: one in which the visual image of the candle causes the child's finger to go out to touch the flame; the other in which the painful heat on the finger causes the child's arm to be withdrawn. A fanciful series of nerve-paths, fabricated in the interests of the 'association theory,' purports to show why after once burning himself the child will in future put out his hand, on seeing a candle, but draw it back again *before* he burns himself. The explanation is beautifully accomplished by begging the whole question; that is, by resting the 'explanation' on certain time (and strength) relations between the two reflexes of extension and retraction—relations which neither diagram nor text accounts for. In fact, apart from the passage in which the whole question is begged, both diagram and text show that on every subsequent occasion the child will infallibly put out his hand, burn it, and then withdraw it, just as he had done the first time; for the reflex path for extending the hand is the shorter and the better established of the two, and it remains entirely vague as to how the impulse to withdraw shall arrive in time to save the hand.

"But Meynert's explanation is not only unsuccessful, it is wrong in its intent. If achieved, it would show that a child once burned will on merely seeing a candle, and before it feels the candle's heat, draw back its hand. And this, Meynert thinks, is the process of learning. Whereas in fact a child that shrinks on merely *seeing* a candle has not *learned* anything; it has acquired a morbid fear. So far from being a step in learning, such a reaction will gravely impede the child in acquiring the use of this innocent utensil. It is true that one severe experience of being burned can establish the morbid cringing at the mere sight of fire, but every teacher knows how disastrous this is to a child's progress; and the mechanism of such a response will not be found in any such figment of the imagination as that which Meynert adduces. I know of nothing in this 'Meynert scheme' that tallies with fact, and, as James well says, it is 'a mere scheme' and 'anything but clear in detail.' Nothing but the authority of the association theory ever loaned it plausibility."

The understanding of Holt's amended scheme is really essential

to his system of psychology and to his later applications to the problems in ethics, and yet it is just here that I must complain of "reviewer's dullness" or else lack of clearness of expression on Holt's part. Holt's solution of Meynert's problem is stated as follows: "The normal process of learning to deal with a candle is the process of establishing a response to an object which is both luminous and hot, if we consider only the two properties so far brought in question. The successful response will be one which is controlled directly by the actual properties of the candle, for this alone means precision and nicety in handling it. The normal child learns the properties of objects, without acquiring a fear of these properties; for fear is *not* 'wholesome.' The case in hand is simple. The child has in fact the two original tendencies, to put out its hand to touch any pretty, bright object, and to draw back its hand when the nerves of pain are stimulated. But these are at first not coordinated; and coordination (learning) is the establishment of a just balance between the openness of the two paths; where 'just' means proportioned to the actual properties of the candle. On first seeing a candle the child puts out its hand; the second reaction (of withdrawal) is touched off by stimulation of the heat-pain nerves in the hand, and the moment at which this will happen depends on the sensitiveness of the heat-pain end-organs, and the openness of the path connecting them with the muscles that retract the arm; of which probably the openness of path is the modifiable factor. The warmth of the candle begins to stimulate this retraction reflex, and stimulates it more, and at an increasing rate of increase, as the hand approaches the candle. All this is needed to save the child from burning its hand, and this is what Meynert's scheme aims to explain, is an openness of the retraction reflex path sufficient to stop the hand before it actually reaches the flame. If the act of extension excited through the eye is not too impetuous, the retraction reflex will from the outset protect the hand; but if the former is a very open path, the advancing arm may get a momentum which the retraction reflex will not be sufficiently quick and strong to counterbalance in time to save the hand from being burned. A few repetitions of the experience will give this retraction an openness which will safeguard the hand for the future; and this process is aided by the prolonged pain yielded by a burn, which continues the retraction stimulus for a considerable period and so 'wears' down the retraction path more than a great many merely momentary stimuli could do. In this way a single experience of burning is often sufficient for all time. Thus experience establishes a balance between the two opposed reflexes, of extension and of pain avoidance, such that the organism carries on its further examination of the candle in safety."

Possibly these two quotations do not sufficiently present Holt's argument. I fail to see even in his more extensive presentation an improvement of Meynert's scheme. Meynert's scheme certainly begs the question, but so does Holt's. If Meynert's scheme demands neural association, so does Holt's. Holt tries to minimize the amount of neural association involved by saying a "few repetitions of the experience will give the retraction path an openness which will safeguard the hand for the future. . . ."[3] But this attempt to minimize the associational factors reminds one somewhat of the classical attempt to minimize moral delinquency by pointing to the small size of the baby. In these few experiences a genuine *learning process* is involved and the explanation of this learning process—regardless of whether the act is acquired in few or many trials—is what I consider one of the chief problems in psychology. Holt makes no problem of it at all. The problems which the reviewer and others have treated under the heading "fixation of arcs in habit" would thus seem to have small place in Holt's system.

In Holt's application of his opposed impulse theory to the field of ethics, he has been somewhat too abrupt. It is hard for the reviewer to see that there are many situations in the life of the child which are on a par with the candle. The baby has to form literally hundreds of thousands of such simple reactions to objects. As I look over them I fail to see how one per cent. of the situations in a baby's life square with the one described by Holt as the general one. I for one feel that Holt should have taken several less spectacular situations in the very early life of the child[4]—and some which offer a bit more resistance to his argument. Accepting Holt's argument at its face value, let us see how he makes his rather ingenious applications in the field of ethics. "An innate tendency or purpose of an infant is to put out its hand to touch fire. If the mother is by, she

[3] I wish here to enter a partial factual objection to Holt's arguments. In the case of two young children I observed, the candle training, given, to be sure, at widely separated intervals, required many separate tests, although the experiment was made complete in the sense that the candle was allowed to remain present until retraction occurred. I can see nothing in the baby's learning to react to a candle which differentiates that act from any other process of learning.

[4] In the later stages of development he has more or less made good this omission. "Thus, just as the leaves of certain plants, which are subject to the two impulses of facing the sunlight but also of avoiding desiccating heat, will spread themselves out broadly toward the sun in the morning and afternoon, but in the heat of noonday will partially fold up, so under the teacher's eye the pugnacious impulse of the small boy is subdued to the furtive expedient of the spit-ball; and so too, the man who yearns for worldly power but yet in *personal* contact with his fellows is unconquerably timid will become a renowned inventor, or a shrewd manipulator of stock-markets, or in politics will work into some important position '*behind* the throne.'" (See also pp. 115 ff.)

holds back the hand (*her* purpose) before it reaches the flame. There is a hint for the child, here, of right and wrong. If the mother guards the child unremittingly, and every time restrains the hand before the uncomfortable warmth begins to stimulate the child's own tendency to withdraw, the child will never be burned and may eventually (in a way to be described) acquire the habit of stopping short before reaching the flame. But this cautious conduct will not be guided by (be a function of) the heat of the flame, for the child has had no experience of this. The child's general conduct toward fire will then be partly a function of the immediate properties of fire (its color, position, shape, etc.); but partly also of a something else (really its mother), which may or may not figure explicitly in the child's field of consciousness. The mother has set a barrier between the child and a portion of reality; and forever after the child will be in some measure impeded in its dealings with fire. An inhibition of which the source of sanction is thus not intrinsic is precisely, I suppose, a tabu.

"Or again, if an equally unremitting mother lets the child put out its hand towards the flame and takes care only that the hand by too great momentum or an accidental lurch does not actually come into the flame, the child will not be burned and its own mechanism of withdrawal will be exercised not through the mother's interference but through the direct action of the flame's heat. The child's conduct toward fire becomes integrated, and is solely a function of the actual properties of fire. Ten years later you shall hear the first mother shouting, 'Bobbie, don't you dare put your hand so near the lamp, and if you touch those matches again your father will whip you.' And the second mother will be saying, 'Bobbie, go get the matches now and light the lamp, and set it down on the center-table.'"

I can not enter here into an analysis of his really brilliant chapter on the Wish in Ethics. Although I am not struck by the cogency of Holt's logic, I nevertheless feel impelled to say that this chapter is the first real contribution I have ever seen towards a functional ethics. Surely in future studies of ethics we can have less of Kant and the history of philosophy in general and a more genuine grappling with the real practical situations which lie at the heart of ethical conduct. I am tempted here to justify the title of this review by modifying a famous Whistler saying—"Holt has written an interesting chapter on ethics, but 'why lug in' Freud?" Ere this chapter is reached Freud's views have become submerged in Holt's.

That which interests me in Holt's book more than anything else is his behavioristic tendency. At one time I am ready to say "Holt is a genuine and consistent objectivist," as for example in his description (pp. 85 ff.) of the man purchasing the railway ticket:

"On seeing the man purchase a ticket at the railway station, we felt that there was more behind this action, 'thoughts' that were the invisible secret of his movements. Suppose, instead, we inquire whether the more is not ahead. More is to come; let us watch the man further. He enters the train, which carries him to a city. There he proceeds to an office, on the door of which we read 'Real Estate.' Several other men are in this office; a document is produced; our man takes a sum of money from his pocket and gives it to one of the other men, and this man with some of the others signs the document. This they give to our man, and with it a bunch of keys. All shake hands, and the man we are watching departs. He goes to a railway station and takes another train, which carries him to the town where we first saw him. He walks through several streets, stops before an empty house, takes out his bunch of keys, and makes his way into the house. Not long afterwards several vans drive up in front, and the men outside proceed to take household furniture off the vans and into the house. Our man inside indicates where each piece is to be placed. He later gives the men from the vans money.

"All this we get by observing what the man does, and without in any way appealing to the 'secret' thoughts of the man. If we wish to know more of what he is doing we have only to observe him more. Suppose, however, that we had appealed to his inner thoughts to discover the 'secret' of his movements, when we first saw him buying a ticket at the railway station. We approach him and say, 'Sir, I am a philosopher and extremely anxious to know what you are doing, and of course I can not learn that unless you will tell me what you are thinking.' 'Thinking?' he may reply, if he condones our guileless impertinence, 'Why, I am thinking that it is a plaguey hot day, and I wish I had made my morning bath five degrees colder, and drunk less of that hot-wash that my wife calls instant coffee.' 'Was that all?' 'Yes, that was all until I counted my change; and then I heard the train whistle.—Here it is. Good-by! And good luck to your philosophy!' "[5]

No behaviorist could give a better description of the situation than this. But yet in many other places in the book Holt finds it impossible to rid himself of subjective terminology. Indeed, his slipping over from one form of expression to the other is quite noticeable all through the book. An objectivist of my own type feels tempted in reading Holt's book to give him just a little push here and there to make him cross the line a little more squarely.[6]

[5] His objective tendency is again uppermost (pp. 125–30), where he ably describes in words wholly acceptable to the behaviorist the mechanism of suppression, dissociation, discrimination.

[6] Possibly it might be well to point out a few such places. He says (p. 16):

One may be disappointed in not finding anywhere in Holt's book a detailed statement of how he can substitute the unit concept "wish" for the introspectionist unit concept sensation. The reason for the omission is clear. When a unit changes in a science the problems and points of interest shift. Holt as a behaviorist has no interest in making the substitutions because his problems do not demand it. He is interested in conduct and, in the present book, in the ethical side of conduct. Nevertheless, I hope that at some future time Holt will do this and show how the conception of the wish as a unit differs in essential particulars from the reflex arc concept which the behaviorists had previously adopted. In a recent number of the *Scientific Monthly* I have tried in a popular way to rewrite the essentials of Freud's theory in terms of behavior. From the psychiatric standpoint it seems to me that the functional conceptions which Adolf Meyer has employed are nearer to Holt's point of view than Freud's very indeterminate concept of the wish.

One might get the impression, and with some justice, from Holt's book that exact experimentation along lines other than those marked off by Freud are at least quite secondary, but the mere fact that Holt has not given any closer contact with the mechanism of habit formation shows quite clearly that the scientific understanding of the *modus operandi* of even the disemboweled wish (*i. e.*, of the wish reduced to motor set or attitude) must await the working out of just those factors which the behaviorists insist upon.

I think it only fair to say that I have reviewed only those parts of Holt's book which particularly interest me. I can whole-heartedly say—before the author says it for me—that any one interested in the book as a unit or system must read the whole volume!

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"The 'still small voice' is the popular, but just designation for the protest of the semi-dormant upper self when, in revery, fancy, or imagination, lower impulses have succeeded in intruding on the field of consciousness." Again (p. 31), in describing one of Freud's books, one feels that Holt is almost "orthodox." "Of course he had unconsciously written 'calligraphy' instead of 'chirography'" (p. 32). "But habit and other preconscious motives exercise specific influence as well" (p. 33). On page 45 I again fail to grasp Holt's use of subconscious. He uses it three times on this page without quotation marks and apparently seriously. It is needless to go through the book in this way, but I can not resist the following quotations which come in after his description of the gentleman purchasing real estate: "Not that there are not actual thoughts, but tradition has turned thought into a myth by utterly misconceiving it and locating it in the wrong place." "Thought is often a mere irrelevance, a surface embroidery on action" (p. 87). Of course the book is only a sketch and it is unfair to criticize the author too severely, but he leaves me confused because in many places he uses thought, subconscious, etc., in quotation marks, while in others he apparently uses them as would the structuralist.

THE CONTRAST BETWEEN SCIENTIFIC THEORY AND THE DEMANDS OF THE PRAGMATIC PRESCRIPTION[1]

IN an earlier paper[2] it was pointed out that corresponding to any fact or law there is definable the set of conditions without which the fact could not be, or without which the law could not be even possibly true (much less probably true). It was shown that the opinion embodying these conditions is frequently known in science as a *theory.* The name, *theory,* was suggested for all such opinions. The theory is as true as the fact. The opinion answering to the conditions so defined would necessarily be workable in an extraordinary degree. Unless this opinion were the true one, things could not be observed to be as they are. The opinion then certainly is one which *works* for the observed facts; and it is this aspect of the matter—and to my mind it is the least important aspect, and certainly not the one which gives theory its claim to be true—that is universally emphasized in the textbooks of science.

The undulatory theory of light works better than the corpuscular hypothesis; it explains things which the discarded opinion could not explain. The kinetic theory of gases works so well that one can predict, with its help, laws which are actually verified. An important textbook of physical chemistry says:[3] "A theory, to be accepted as useful, must enable us to deduce known facts and new facts. The kinetic theory of gases certainly fulfils the requirement, for we can deduce from it the gas laws and Avogadro's hypothesis." The theory here, it seems, should be *accepted as useful.* It is wholly overlooked that the kinetic theory, in the main (in the main, for I do not think that every bit of the kinetic theory answers the requirement) is a statement of the conditions without which a large group of phenomena could not be. As such it is true. Now, I say, it is *not* remarkable that true premises should enable one to predict verifiable conclusions. For the true implies only the true. Logicians know, however, that the false also implies the true; and it may well happen that an hypothesis, though false, still leads to verifiable predictions. Thus an hypothesis may be false though workable. And the scientist who lauds a theory, because it leads to verifiable predictions, has been offered bread, but has chosen a stone. He has turned his back upon the most valuable attributes of his theory. The true is always workable, but the workable is not always true.

The inductive process whereby an hypothesis after repeated veri-

[1] This paper was read at Professor Royce's seminary, January 18, 1916.

[2] See this JOURNAL, Vol. XIII., p. 236.

[3] S. L. Bigelow, *Theoretical and Physical Chemistry,* 1914, p. 140.

fications becomes a law is an evolutionary process in the advancement of learning. The opinion which is possibly true rises to the plane where it is probably true. Here is improvement—and growth of knowledge. But, for an hypothesis to become a theory—speaking strictly, there is no such thing. The hypothesis, however workable it may be, is or is not already a theory. Some one notices that these are the conditions without which the phenomena could not be, and—lo, we see that what we had taken all along for an hypothesis is really a theory after all—and it's true. What is more natural than that it should have led to verifiable predictions. The multiplication of instances of successful prediction demonstrates more and more the workable character of the hypothesis, but it proves nothing; and if it happens that it is a theory already that we are considering, our ability to predict from it facts that we already know adds not one jot to our knowledge.

I. Some Pragmatic and Other Aspects of the Kinetic Theory of Gases

In 1738 Daniel Bernouilli came forward with the hypothesis that gases consist of particles moving about with great rapidity, hitting against one another and against the walls of the containing vessel, bouncing off again, like elastic balls, to continue their movement, with unimpaired velocity, in a new direction. According to this hypothesis the pressure of the gas would be due to the many impacts of the many particles upon the walls of the containing vessel; and, consequently, the pressure might be increased either by increasing the number of particles in the given volume or by increasing the velocity with which they moved.

More than a century later, in 1851, Joule showed that one of the consequences of this hypothesis is Boyle's law—and that law is known to be genuine. The successful prediction from this hypothesis of verifiable consequences brought it again to the attention of scientists. It was taken up by Krönig and Clausius in 1857 and has since been developed by many others in its various ramifications.

Joule's reasoning was essentially as follows: Suppose that the quantity of gas contained in a cubical container, whose sides are l centimeters long, consists of n particles, each of the mass m, and each moving with an average velocity V. From a consideration of the parallelogram of forces, it follows that the force of impact of the particles striking against any side of the cube is the same as it would be if one third of all the particles ($\frac{1}{3}n$) were moving in a direction perpendicular to that side. One particle will require l/V seconds to move from one side to the opposite one, and will therefore strike the given side $\frac{1}{2}(V/l)$ times per second. The momentum

of the moving particle is mV and on bouncing away from the side after the impact it has a momentum quantitatively the same, but of opposite sign. Its change of momentum then is $2mV$. Thus the total change of momentum of $\frac{1}{3}n$ particles striking the side $\frac{1}{2}(V/l)$ times per second will be $[\frac{1}{2}(V/l)](2mV)(\frac{1}{3}n) = \frac{1}{3}(nmV^2/l)$. This is the total pressure exerted on any side. Since the area of the side is l^2, the pressure per unit area will equal $\frac{1}{3}(nmV^2/l^3)$. But l^3 equals the volume v of the cube. Therefore $p = \frac{1}{3}(nmV^2/v)$ or $pv = \frac{1}{3}nmV^2$. For the gas under consideration n, m, and V are constant values; then the total of everything on the right of the equality sign is constant, and $pv = K$—which is the expression of Boyle's law. The ingeniousness of the reasoning demands admiration.

Joule's reasoning is brought forward very frequently as evidence in favor of the kinetic theory. Aside from the mathematical part it amounts to this:

1. If the kinetic theory were true, Boyle's law would be a physical necessity.

2. Boyle's law is genuine (instances of it are fact). Would any one think of concluding from these propositions, "Therefore the kinetic theory is true?" Stripped of all concrete significance, the propositions become

1. A implies B,

2. B is true;

and it certainly does *not* follow that A is true. The true implies the true, the false implies the true, and the true may be implied by either the true or the false. No judgment upon the truth or falsity of A is justified. Yet A works.

My only excuse for discussing these truisms of logic is their bearing upon pragmatism. The kinetic theory as used by Joule *worked;* its pragmatic value for him could be defined as its pointing toward verifiable conclusions; its *working* lay in the fact that it implied the true. Yet we know that the true may be implied by the false. Science, therefore, must refuse to accept the pragmatic criterion. *Why should we satisfy ourselves with hypotheses which imply the observable, when we can get theories which the observable implies?*

Does the fact that A implies B, while B is true, render A *probably* true? One would be tempted at first sight to say that it does not. Would the fact that A implies B, and C, and D, and E, etc., where B, C, D, and E, etc., are true, render A probably true? One begins to become suspicious. The fact pointed out by Joule, that the kinetic theory implies Boyle's law, is one instance of the workable character of the kinetic theory. It happens moreover that a

great many gas laws and observable properties of gases may be predicted from the kinetic theory. These are further instances of its workableness—and altogether there is quite an array of "fair samples." The induction is justified that the kinetic theory is probably always workable. If *A* implies *B* and *B* is true, then in this case *A works.* Suppose that in other cases where *A* implies *C, D, E, F,* and so on (where *C, D, E,* and *F* are "fair samples") it is still found to *work,* then it is probable that *A* universally *works.* That is, it is probable that *A* always implies the true. But that which *always* implies the true is itself true. Then it is probable that *A* (always implies the true and) is true.

In a word, then, "fair sample" cases in which the results predicted from an hypothesis are verified render the hypothesis probably true.[4] Still it is going rather far to hold up the kinetic theory as probable on the strength of the single successful prediction of Joule. Yet there are so many similar cases that it is indeed highly probable.

The kinetic theory certainly provides an excellent working explanation of a large group of phenomena. But isn't it really more than a plausible hypothesis? Isn't it a theory, in that it is, in the main, a statement of the conditions without which the phenomena could not be? Isn't it true?

There seems little reason to doubt that Joule looked upon his own explanation of the mechanics of gas-pressure as an hypothesis adapted to the fact. Yet at the time in which Joule lived there were sufficient experimental data available to justify his conclusion as theoretically true. Facts which had already been observed implied his explanation. The physical and chemical behavior of gases implied Avogadro's Theory, namely, that equal volumes of gases under the same conditions of temperature and pressure contain equal numbers of molecules (or what may be called "physical units"). The fact of the existence of substances of the same composition, yet palpably different, implied that the matter of which they were made consisted of separable particles. Then certain gases, specifically those which can be used in synthesizing isomeric substances, definitely do consist of particles, and equal volumes contain under the

[4] This seems a great advance over such inductions as "all swans are white," "all men are mortal." For, here, by the examination of one set of things we confer probability on another set. This is a theorem of what might be called "the calculus of fair samples." All the theorems of this calculus would not lead to probabilities. Another was developed in the paper referred to above. Many others are hidden, I imagine, within masses of scientific data. Such a calculus, if complete, would be the complement of the algebra of logic—for within the two our manner of knowing all things, except the metalogical, would be comprehended.

same conditions equal numbers of molecules, and the molecules themselves contain each a definite number of atoms. Joule knew that gases diffuse into one another to form homogeneous mixtures, that a heavy gas diffuses upward into a lighter one, and that, when the diffusion is complete, there is never any tendency on the part of the heavier gas to settle out again. Had he reasoned that these things could not be unless the particles of which gases consist are in constant movement, hitting against one another and bounding off again with unimpaired velocity, his conclusions would have had the truth which attaches to a theory. Graham's law states that the rates at which gases diffuse are inversely proportional to the square roots of their densities. This means, since equal volumes contain an equal number of particles, that the rates of diffusion are inversely proportional to the square roots of the masses of the particles. Had Joule reasoned that this law could not be unless the velocities of the particles of gases (at any temperature) were inversely proportional to the square roots of the masses of the particles, his conclusions, again, would have had the truth of a theory. Since the kinetic energy of a moving mass is proportional to the mass and to the square of the velocity (proportional to MV^2), Joule might well have reasoned that all these facts could not be unless the average kinetic energy of a particle of one gas, at a given temperature, were equal to the kinetic energy of any particle of any gas, at the same temperature. All these facts were well known in 1851, and Joule could have demonstrated to anyone who had the patience to listen—and patience is needed, I fear—that the kinetic theory of gases is the necessary implication of the observed behavior of gases. As such it is true.

In his paper of 1851 Joule actually calculated the average velocity[5] of the particles of certain gases at a definite temperature. It is interesting to notice that the velocities calculated by Joule are actually *true* velocities. Their numerical exactness is limited only by the precision of the physical measurement of the quantities involved in the mathematical calculation.

The viscosity of gases, at any given temperature, is independent of the pressure upon them. If gases are homogeneous throughout, the effect of an increase of pressure would be to increase the quantity of stuff in a given volume, and consequently to increase the viscosity. If gases consist of moving particles, the effect of an increase of pressure would be to increase the number of particles in a given

[5] In the equation given above p and v can be measured directly; n and m can not be measured, but their product, nm, the number of the particles times the mass of the average individual particle, is equal to the total mass of the gas under consideration. This can be measured, and V calculated.

volume, but the velocity of the particles would not be altered, and the viscosity would remain unchanged. We may say that unless the kinetic theory were true, in the main, the effect of pressure on viscosity could not be as it is observed. Hence the kinetic theory is true. Lord Rayleigh says that the viscosity of gases is, to his mind, the best evidence that there is for the kinetic theory. Professor Richards, who reports the conversation, remarks that this is interesting in that it shows the point of view of the physicist, but for the chemist there are also many other considerations which point toward the kinetic theory. Some of these considerations have been indicated.

The evidence which has thus far been presented for the truth of the kinetic theory is, to say the least, complex and technical. A simple and beautiful experiment has been performed very recently by Dr. Wood, of Baltimore, so simple that its implications would be evident to children in grammar school—and to this experiment the main tenets of the kinetic theory stand in the position of the *conditiones sine qua non*. The confessed object of the experiment was to obtain a gas in which all the molecules were moving in one direction. This result was to be attained by removing all the molecules which happened to be moving in other directions. Mercury vapor was admitted at the end of an evacuated cylindrical glass vessel, the vessel being submerged in liquid air. Since the particles of the incoming vapor were moving about in all directions and colliding with one another, many of them found their way at last to the sides of the cylinder. When they struck the sides of the cylinder, the cold liquid air removed most of their heat, they did not bounce off again, but remained condensed upon the cold glass surface. The rest of the particles, then, were moving in more or less straight lines through the length of the cylinder. At the center of the other end of the cylinder there was a small hole leading into a spherical glass chamber. The mercury condensed in a droplet *opposite this hole*, but nowhere else upon the walls of the spherical chamber. It seems to me that much genius is needed in the man who would devise a single simple experiment which means as much as this one. For any one can see that this experiment *could not be* unless the main tenets of the kinetic theory were true.

The kinetic theory is the rock upon which much of thermodynamics, and of physical chemistry, and of physics is built. That this theory, in the main, is as true as any bit of experience is a highly important matter. It is for that reason that I have selected it for the present discussion—in spite of the fact that the data upon which it is based are not of the most familiar kind. It has appeared that it possesses a truth wholly beyond that inherent in its prag-

matic workings. So it is with all real theories. Theory and hypothesis are wholly unlike. The logical nature of this contrast will appear more distinctly from a consideration of simpler cases. This consideration will serve also to show again that the tendency of scientific men to theorize is not devoted wholly to the production of highly important theories which form the basis for several sciences at once, but that it leads to little pieces of new information (really theories, but seldom called so)—tucked away oftentimes in the corner of some special science, but having that which far more important hypotheses do not have—namely, truth.

II. Other Instances of Theory

Although sun-spots had been observed with the naked eye before the time of Galileo, his telescope permitted him to make more extended observations upon them. With the new information at hand, he straightway began to theorize. The observation that the spots appeared to move across the face of the sun, coming to him upon the heels of his discovery of the satellites of Saturn, led him to suppose at first that their appearance was due to planets revolving near to the sun and appearing as black spots against its luminous disc. Presently he noticed that occasionally one large spot divided itself into several, and occasionally several combined to form one. The spots varied in degree of darkness. As they approached the edge of the sun's disc they appeared to contract in breadth, without losing in length. Finally, it sometimes happened that a number of spots of varied size appeared in a certain order, and then, after a period of disappearance, they reappeared again in the same order. Galileo gave the true explanation of these phenomena: the spots were not planets intercepting the sun's light, they were on the sun itself and the sun was rotating about an axis. At this distance it is evident that the explanation of Galileo is a *theory*. Unless the sun rotates about an axis, and unless the spots are on the sun, these things could not be as they are observed. Here is no mere working hypothesis. *This* explanation is implied by the observations.

The situation becomes still more interesting when there are several hypotheses, all equally workable for the phenomena under consideration. Sooner or later there comes a time when an observation or critical experiment is made which renders one or more of the hypotheses, maybe all but one of them, now unworkable. The surviving hypothesis still "applies"—subject always to the possibility that a further situation may arise which will render its abandonment or revision necessary. As a matter of logic it *may happen*, as a matter of fact it often *does happen*, that the new observation is such that it not merely renders some of the hypotheses unworkable,

but actually implies or presupposes some other. That which is so implied is, of course, as true as the observation which implies it. It is no guess. It is a theory.

The theory of the manner in which coral islands are formed is an admirable case for the present discussion. There are three kinds of coral islands: "Fringing reefs," which lie along the shore of a mountain which rises out of the sea, the commoner type of coral reef enclosing in its more or less circular form the mountain-island, separated from it on all sides by a lagoon of placid water, and finally, the "atol," more or less circular and enclosing no island. It is known that corals grow only in water of less than a certain depth. Therefore, one may say—however these reefs were formed,—they certainly had their beginnings in shallow water.[6] Darwin offered the explanation that the coral growth began as a fringe upon the shore of the mountain-island; slowly, through geologic ages, the island subsided beneath the ocean, and new growths of coral arose upon the older coral formation now deeper below the surface. Thus, after the mountain had subsided for a certain distance, the result would be a reef encircling the island and separated from it by a considerable space of water. If the island sank entirely below sea-level, the result would be an atol. This explanation worked. It explained the general circular form of the coral islands; it fitted with the fact that corals do not grow in deep water.

There were other explanations. One supposed that the action of the waves washed the island away, either entirely, or all but the central part, and that the corals grew up afterwards upon the edge of the resulting shoal area. Another supposed that the corals grew first upon the coast of the island, and that the island was afterwards washed away wholly or in part by the action of rains or of the sea. It is to be noticed that these hypotheses also explained how the three kinds of coral islands might have been formed.

Some years later the observation was made in the light of which one of these explanations is seen to be a theory. A geologist, having climbed one of the volcanic mountain-islands of the Hawaiian group (the island was surrounded by a coral reef) noticed that the sides of the mountain were heavily furrowed. The rain-water running

[6] Throughout this part of the discussion there are two assumptions: (1) That time was as it is now, that temporal processes extend backward farther than we can grope or conjecture; and (2) that the laws of nature (whatever they may happen to be) were effective in this past time even as they are now. I shall not attempt here to defend these assumptions because they are not assumed for the discussion of *theory*, but rather for the discussion of something geological—without them there could be no question of geology. To deny these assumptions is to deny the right of geology to any truth whatever. Grant them, and geology may have its theories just as the other sciences have theirs.

down the mountain had worn valleys in the sides. Wherever one of these met the sea there was a bay. Now the rain-water, in coursing down the mountain, had carried with it large quantities of solid material, else it could not have worn away these valleys. If the mountain-level or the sea-level were not changing, then this material, which was poured out into the water near the shore, would have deposited and formed a delta. Actually there were no deltas; observation showed just the opposite thing, namely, bays. There could be no bays where the valleys met the sea *unless* the island were sinking below the sea-level at a rate faster than deltas could be deposited: therefore the island was sinking. Such a statement is logically of the nature of a theory.[7]

Let us reconsider the whole matter, while the various considerations are stripped of their concrete significance. We have here three hypotheses, H_1, the Darwinian explanation, H_2, and H_3, the other explanations which have been mentioned. All of these work for certain phenomena, A_1, A_2, and A_3, namely, the formation of the three types of coral island. They *imply* these three types, and the three types are observed. That is,

$$H_1, H_2, H_3 \text{ imply } A_1, A_2, A_3;$$
$$\text{and } A_1, A_2, A_3 \text{ are observed.}$$

The observation of Dana, upon the rain-valleys of the mountain-side and the bays upon the shore, A_4, was an observation of phenomena which are implied by H_1, but not by H_2 and H_3 (for, if H_2 or H_3 were true, there would be deltas). H_2 and H_3 then drop out of the running. They no longer work. There is left H_1, the sole-

[7] Whether King Arthur's sword sank beneath the waters of the lake or the waters rose above King Arthur's sword is a verbal question. Here too, in discussing the manner of formation of coral islands, we may, if we wish, disregard the question of whether the mountain absolutely sinks or the sea absolutely rises. For geology, of course, this is an important question, but it does not bear directly upon the mode of formation of coral islands. This question, too, perhaps, is, or will be, capable of a theoretic answer.

The original hypothesis as brought forward by Darwin insisted upon the *absolute* subsidence of the mountain. The American, Dana, made the observation of the embayments at the foot of the valleys, but he did not appreciate its significance. The *relative subsidence theory* is recent. For the facts in this part of the discussion I am indebted to Professor W. M. Davis, of Harvard.

Some of the theories of science are rigidly implied by the facts. Some are implied only if certain laws of nature (really probable) are assumed to be true. In many cases hypotheses which work by implying the verifiable imply the verifiable only by virtue of certain laws which are assumed to be true. So, whether the implication be rigid or be of this inductive kind, the distinction between theory and hypothesis is still genuine; and, though several of the implications in the foregoing are of this latter kind, no harm is done, so long as the confession is made.

surviving successful hypothesis. It implies all of the relevant facts which have been observed so far. That is

H_1 implies A_1, A_2, A_3, A_4;
and A_1, A_2, A_3, A_4 are observed.

A_4 appears here as a crucial observation. It decides against certain hypotheses in favor of some other. That, it seems to me, is as far as pragmatism can get. But it is not yet a complete statement of the logic of the case. The fact that there is a bay where the rain-washed valleys of the mountain meet the sea implies that the mountain is slowly subsiding below the sea. . . .

A_4 implies H_1;
and A_4 is observed.

Clearly then, if A_4 is true, H_1 is true also. The true implies only the true. We are as sure of H_1 as we are of A_4. H_1 is as true as any bit of experience. It is a theory.

The more cases there are in which an hypothesis works, provided the cases are always "fair samples," the more *probable* it becomes that the hypothesis is true. That is the best we can ever hope for from any process which consists wholly of guessing and verifying. But guessing is not theorizing: and for the scientist, the great value of the "method of multiple working hypotheses" lies in the fact that, the more hypotheses he has, the more likely it becomes that one among them will some day be implied by some new experiment or observation. The one so implied is a theory—and it is as true as the corresponding piece of experience. There seems to be many such theories in science.

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THE WILL TO LIVE

ONE of the important facts that psychology contributes to human wisdom is this—that any stimulus, even an unpleasant one, is usually attractive when it is not too strong. This fact is generally dropped into a footnote, as though it were an amusing though negligible accident, but it is quite generally agreed to. I have noticed it recently in works so wide apart as Washburn's *The Animal Mind* (p. 43) and McDougall's *Social Psychology* (p. 150). Washburn says, speaking of Jennings's experiments with the amœba:

"The significance of the positive reaction is harder to determine. It seems to be given in response not to a special kind of stimulus,

but to a mechanical or food stimulus [*i. e.*, practically any perceptible stimulus] of slight intensity."[1]

McDougall says:

"The intrinsic feeling-tone of the emotions seems to follow the same rule as that of the sensations, namely, that with increase of intensity of the emotion pleasant tends to give way to unpleasant feeling-tone; so that, while at moderate intensities some are pleasant and others unpleasant, at the highest intensity all alike become unpleasant or painful; and, perhaps, at the lowest intensity all are pleasant."

"Thus fear," he goes on to say, "at low intensity does but add a pleasurable zest to any pursuit, as we see especially clearly in children, sportsmen, and adventurous spirits generally; whereas at high intensity it is the most horrible of all experiences."

It will be remembered how James shocked our sensibilities by telling us that we enjoy the smell of a skunk that is not too near. "Everyone," he says, "who has a wound or hurt anywhere, a sore tooth, *e. g.*, will ever and anon press it just to bring out the pain. If we are near a new sort of stink, we must sniff it again just to verify once more how bad it is."

These statements are all strongly confirmed in my experience and observation. I notice that children always want to do whatever they see any one else do, and as it is old-fashioned to say that they have an "instinct of imitation," we shall have to say that they have a thirst for experience which is very general. They want to "see what it feels like," and after they have seen what it feels like, then they want to feel it again and more strongly. They want to increase and intensify their experience. Every one of us, I suspect, could remember instances in which he courted sensations that are instinctively abhorred. He courted *abhorrence.*

All this is in my mind just now, because I am editing a magazine which is illustrated by a group of artists to many of whom "beauty" is anathema, and loveliness, or gracefulness, or the decorative, or any of those humble ideals of our youth are regarded as exceedingly

[1] Jennings himself (*Behavior of the Lower Organisms,* p. 116), cites the observations of Pearl on the behavior of the flatworm, *Planaria* (whatever that is), to the following effect:

"Sometimes individuals are found which for a brief period (two or three hours) seem in a much more active condition than usual. They move about rapidly, but do not conduct themselves like the excited individuals. As they move they keep the anterior end raised and wave it continually from side to side as if searching. Specimens in this condition react to almost all mechanical stimuli, whether weak or strong, by the positive reaction, turning toward the point stimulated. Experimentation failed to show that this condition was due to hunger."

rustic and out-dated. These artists seem both healthy and happy, and subtracting their dogmatism, I see nothing to distinguish them from others except that they are more like children. They have never been taught to fear the censorship of some one who proclaims a social standard of good taste. The standard they set for themselves, as nearly as I can formulate it, is that their drawings should always have *some pronounced quality*. In other words, their positive tropisms are a little indiscriminate. They are attracted by stimulation in general.

And so in some degree are we all. We are like the amœba. Its negative tropisms are specialized; they appear only where they are necessary to survival. But its positive tropisms are not merely something developed through utility—they were a fundamental general attribute of its nature.

This means to me that life has an interest in living. And I think this too obvious fact is being overlooked not only in the sciences, but in the logics and philosophies of to-day, with results that will appear somewhat absurd to-morrow.

It was natural that in an age and nation so devoted to business as ours, a practical conception of universal life and mind should arise and dominate the field of science. And beyond question the fruits of that conception will be lasting. But in time we shall recover from the idea that everything that happens, from tropism to truth, is a practical adaptation. We shall recover so completely, I hope, that no mystical or metaphysical affirmations will have to take its place. We shall simply find ourselves not making that assumption any longer, but spontaneously conceiving organisms and intellects as rather more adventurous than they used to be.

We shall find not only that experience as such is welcome to life, but that life of its own accord goes in search of experience. That "general motility" which Jennings has to add to the specific reactions, in writing the biography of lower organisms, will, if separately dwelt upon, supply a standpoint from which life can be viewed as fruitfully as from the standpoint of adaptation to stimuli. We are not merely trying to adapt ourselves in order to stay alive, but we are trying also even more energetically to live. Everything we do and think is not a reaction; a great deal of it is action. The "Behaviorist" is not so much to be condemned for his refusal to observe or consider "states of consciousness," as for his totally inadequate view of what he does observe and consider. The interaction of organism and environment is for him carefully divided into reflex arcs, all operating in one direction. A stimulus to the end-organ, a commotion in the central-nervous system, then a response in the muscles—that is the whole story of life in his laboratory. But life

interflows with reality in full circles. We do things not only because we have a sensation, but also in order to make a sensation. And so do the most elementary organisms. Any rubber ball can react, but it requires life to act. And life does act.[2] It seeks experience. That is what we shall learnedly discover when we are passing out of the age of the sovereignty of business.

In the life of mind this spontaneous seeking, and this pleasure in stimulation as such (which I have called elsewhere a "poetic impulse"[3]) appears in two forms. It appears first as a tendency to linger on and develop the imaginary and emotional accompaniments of thought. There is much vivid imagery in the minds of some people, and they enjoy it. They enjoy it almost as much as they enjoy hearing the unluckier people assert that such imagery does not exist. But even for these unlucky there are ways of remembering and imagining which create quite a commotion in their bodies, and they enjoy that. They enjoy recalling experiences for their own sake. And that gives rise to poetic speech.

Poetic speech is speech in which the quality of the experiences that are mentioned is dwelt upon to a greater degree than the meaning requires. Writers of esthetics usually ask themselves why people compose poems. But that is a question which can not be answered in general. People compose poems for many different reasons—because they want to have them, they want to show them to somebody, they feel bad, or they feel good, they desire praise, or they are expected to compose them. The question is neither answerable nor important. An important question that can be answered is, *why do so many people when they have something to say, inevitably say it poetically, at a considerable loss of time and effort?* Why are we all delighted with the conversation of such people? And the answer is, *because we all have an underlying general interest in experience, whether pleasant or unpleasant, and we like to have it touched off to our imaginations as we go along.* We have a yearning that is not hunger, nor love, nor curiosity, nor any of the specific instincts, but is in fact a concrete manifestation of that will-to-live which occupies so important a place among abstractions.

This "will to live" appears also in forms of language which are not so colorful as what we call poetry. In philosophy itself, much that is puzzling may be explained by confessing that life has an

[2] This position is not meant to, and does not, deny the value of a mechanistic view of the world. It is quite possible to conceive that the tendency to seek experience and activity for their own sake was imparted to the cells of life at some time by some causes. The point is to recognize that, as they are known to us, they have this tendency; they are not inert until stimulated by their environment as it is the fashion of mechanistic behaviorists to conceive.

[3] *Enjoyment of Poetry,* Chapter I.

interest in living. I am sure it is beyond the scope of the reflex-arc to explain Mr. Bertrand Russell's interest in laying out months and years of his life in order to prove that he is not quite sure whether an external world exists, but he believes that it can be proven either that a little of it does or does not exist, if we all keep at it for a long time! I fail to find anything practical or anything adaptive in Mr. Russell's intellectual tropisms. They too have the character of *general motility.*

Mr. Russell's book[4] (after I got through its title) was quite absorbing to me. And although in the middle of it I read and agreed with John Dewey's demonstration[5] of the fact that the author could not fruitfully *even ask the question* of which he was discussing the answer, my interest in his discussion continued to the end. It did not seem to matter whether the question of the existence of the world "meant anything." I always approach these metaphysical books in the mood of the gentleman who said: "Well, how do you do?—Not that I give a damn, but just to keep up the conversation." And it is my earnest belief that John Dewey's demonstration of the impossibility of asking that question without assuming an answer, can be applied to every treatise upon any question strictly to be called metaphysical. We all darkly know that we are dishonest when we write metaphysics. We make these subtle deceptive assumptions for the sake of getting a question asked, and we discuss the question in a learned language whose very structure involves an answer, because we are interested in the intellectual adventure. If we did this playfully, and regarded our books of metaphysics as we regard a game of chess, we need not hide those assumptions from our consciousness; but a great part of the emotional content of the adventure would be lost. It is an adventure among entities, absolutes, universes, not merely among ideas in our minds. It is our serious life that wants to be playful, and in order to carry its seriousness into this field of play it has to delude itself with a pretense of fundamental rationality that is impossible there.

Metaphysics is at least sincere and correct in asserting its complete irrelevance to any practical problem. It is a holiday excursion. It is life living; not life preserving itself. And though its results may not partake of the nature of truth—truth may belong wholly to the sphere of adaptation—they have their own value. They and those terrific paths of rational discipline that lead to them are a part of the wealth of being. And this fact will give us no difficulty,

[4] *Our Knowledge of the External World as a Field for Scientific Method in Philosophy.*

[5] "The Existence of the World As a Problem," *Philosophical Review*, July, 1915.

even when the outcome is as piecemeal and meaningless and barren of beauty as Mr. Russell's method makes it, if we recognize that organisms seriously thirst after experience in general. There is another kind of value in the world besides truth, and beauty, and the good, and that is life itself. And no one will deny that metaphysics, even of the new unsoulful kind, is a very strenuous form of life.

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REVIEWS AND ABSTRACTS OF LITERATURE

A Budget of Paradoxes. AUGUSTUS DE MORGAN. Edited by D. E. SMITH. Chicago: Open Court Publishing Company. Pp. viii + 402, 382.

Modern science has been built up by slow and laborious processes, and to achieve even a moderate understanding of it requires more labor than the great majority of the literate are willing to exert. This prepares the ground for the brood of impatient romantic souls that are eager to substitute some brilliant scheme of their own for the monotonous régime of established science. In the end these seekers after the philosopher's stone, social and physical panaceas, and other romantic get-rich-quick schemes are eliminated by their own natural sterility. But in spite of this sterility they are an interesting brood and their natural history is worthy of serious study. Such a study might contribute greatly to the understanding of the sociology, psychology, or pathology of the intellectual life. So far as I know no such study or special investigation has ever been undertaken. De Morgan's *Budget of Paradoxes*, however, is a wonderful source- or case-book for such a study. It does not go into the etiology of the subject, but supplies us with a rich museum of intellectual oddities. But one may read and enjoy these two volumes quite apart from any technical scientific interest. De Morgan was one of those rare minds that can combine a wealth of accurate learning with originality of insight and genuine wit, and the reading of these volumes is bound to evoke a feeling of gratitude to the editor and publisher for making the book more available to the general public.

The bulk of these two volumes is devoted to the mathematical heretics, the squarers of the circle, trisectors of the angle, and subvertors of the Newtonian theory of gravitation. But there is a great deal of good sense about science generally. Especially worthy of mention are the remarks on the snobbery of men of science (*à propos* of the F.R.S. and other expensive titles, pp. 25 and 30), the merciless showing-up of the myth about induction and about Bacon as the

founder of modern scientific method (I., pp. 75–79), and the answer to the theologian's appeal that the probabilities of science should not be used to attack the certainties (!) of theology (I., p. 316).

The following may give those unfamiliar with this book a taste of the style: "I look upon all the churches as fair game which declare [*cf.* the Athanasian Creed] that *absque dubio in æternum peribo:* not for their presumption towards God, but for their personal insolence towards myself. I find that their sectaries stare when I say this. Why, they do not speak of you in *particular!* . . . But I hold with the schoolmen that *'omnis homo est animal'* in conjunction with *'sortes est homo,'* amounts to *'sortes est animal.'* . . . If this be not conceded, then I retort in their own manner, 'Whosoever would serve God, before all things he must not pronounce God's decision upon his neighbor. Which decision, except every one leave to God himself, without doubt he is a bigoted noodle'" (II., pp. 32–33).

For an analysis of the differences between the logic of Protestant and that of Papal Christianity, I know nothing in all literature comparable to De Morgan's parable of the two milk dealers (II., pp. 33–36). The conclusion is still applicable in this day of friendly alliance between philosophy and theology: "The theologian writes a philosophy which seems to tell us that the New Testament is a system of psychology; and the philosopher writes a Christianity which is utterly unintelligible as to the question whether the Resurrection be a fact or a transcendental allegory. What between the theologian who assents to the Athanasian denunciation in what seems the sense of no denunciation, and the philosopher who parades a Christianity which looks like no revelation, there is a maze which threatens to have the only possible clue in the theory that everything is something else, and nothing is anything at all" (II., p. 36).

The editor has industriously ransacked the printed encyclopedias for biographical facts concerning the diverse worthies mentioned by De Morgan. But some readers would have been more grateful to him if he had been able to discover the name of the logician, friend of De Morgan, who addressed the latter thus: "Next to the man who forms the taste of the nation, the greatest genius is the man who corrupts it. I mean, therefore, no disrespect, when I say that I have hitherto always considered you as a great logical heresiarch." It may, however, be too much to expect that the reading of these volumes might induce some to become familiar with De Morgan's acute and fertile logical "heresies" embodied in his *Formal Logic* and in his memoirs in the *Transactions of the Cambridge Philosophical Society* —of which no mention is made anywhere in these two volumes.

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A Text-book on Logic. ARTHUR ERNEST DAVIES. Columbus, Ohio: R. G. Adams and Company. 1915. Pp. 601.

The style of the author is simple, easy, and entertaining. As the reader proceeds he is overtaken with the feeling that every aspect of the topic under discussion is to receive full consideration. It is evident that Professor Davies is master of his subject and is bent on clearing up many of the abstruse problems of logical doctrine. The book is free from bombast and scholastic assumption, and the reasoning is logical and conclusive. The work is written in the spirit of the thinker and not the teacher, therefore system and teachableness are sacrificed on the altar of comprehensiveness. From the viewpoint of induction and deduction the book is well balanced. There seems to be no attempt to relate the subject of logic to the theory and practise of education. It is not a text for the beginner, but should fill a felt need in the more advanced college work.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. July, 1916. *The Renewal of French Thought on the Eve of the War* (pp. 297–314): ALBERT SCHINZ.—The artists, poets, writers, and philosophers of France are turning away from rationalism or realism toward idealism and a genuine religiosity. This movement is ridding France of dilettantism and is restoring to her in a religious and philosophical way her more abiding ideals. *The Number of Observations upon which a Limen May Be Based* (pp. 315–319): E. G. BORING.—The author opposes Fernberger who in lifted weights insisted that at least 50 tests should be made. The claim is made that fewer cases can often mean as much or more, depending on the problem and circumstances. *The Gesture of Affirmation among the Arabs* (pp. 320–323): S. S. GEORBE.—H. Petermann in his *Reisen im Orient* states that the Arabs in affirmation shake the head as we do in showing negation. It is shown that such movements as now practised and as shown in literature are essentially the same as ours. The shaking motion was probably an accompanying gesture of determination, pride of execution, or the rising to the occasion. *Positive After-Images of Long Duration* (pp. 324–334): P. F. SWINDLE.—Experiments with an owl and a cockatoo indicate that they have positive after-images of long duration. With the proper illumination and presentation positive after-images of long duration can be induced in

the human eye. *A Simple Daylight Photometer* (pp. 334–340): C. E. Ferree and Gertrude Rand. – Description of a simple photometer for laboratory use. Quickly gives readings for intensity of daylight when the same illumination is desired. The photometer can also be used for measuring illumination in absolute units. *The Nature of Recognition Memory and of the Localization of Recognitions* (pp. 341–362): Margaret Hart Strong and Edward K. Strong, Jr. – The factor of localization in recognizing is brought about in the ease with which the nervous discharge takes place over the associational paths involved. *Psychoanalytic Studies of Genius* (pp. 363–416): Lucile Dooley. – A collection of epitomes of psychoanalytic studies of genius. The series includes the following: S. Freud, *The Delusion and the Dreams in Jensen's "Gradiva";* S. Freud, *A Childhood Memory of Leonardo da Vinci;* Karl Abraham, *Giovanni Segantini;* Ernest Jones, *Andrea del Sarto's Art, and the Influence of his Wife;* Ernest Jones, *The Problem of Hamlet and the "Œdipus-Complex";* Alice Sperber, *On Dante's Unconscious Soul-life;* J. Sadger, *The Love-life of Nicolaus Lenan;* J. Sadger, *Heinrich von Kleist;* Otto Kaus, *The Case of Gogol;* Max Graf, *Richard Wagner in the "Flying Dutchman";* Otto Rank, *The Lohengrin Saga;* Ludwig Jekels, *The Turning Point in the Life of Napoleon I;* Ernest Jones, *The Case of Louis Bonaparte, King of Holland;* Karl Abraham, *Amenhotep IV. Echnaton. Psychoanalytic Contribution to the Understanding of his Personality and of the Monotheistic Atoncult;* Oskar Pfister, *The Piety of Ludwig von Zinzendorf;* Oskar Pfister, *The Hysteria and Mysticism of Margareta Ebner;* Georg Lomer, *Ignatius Loyola, from Erotic to Saint;* Edward Hitschmann, *Schopenhauer. Attempt at Psychoanalysis of the Philosopher: and some other studies. Minor Studies from the Psychological Laboratory of Cornell University:* E. B. Titchener and H. P. Weld. *Mechanical vs. Manual Stimulation in the Determination of the Cutaneous Two-Point Limen* (pp. 417–419): M. Carnes and L. C. Shearer. – Mechanical application is advantageous because of a little greater scientific accuracy. *On Memorizing with the Intention Permanently to Retain* (pp. 420–426): F. P. Boswell and W. S. Foster. – The intention is effective in its influence on the mode of learning. *Some Uses of Artificial Daylight in the Psychological Laboratory* (pp. 427–429): A. J. Brown. – Artificial daylight produced by means of Gage's glass proved very satisfactory in laboratory and class-room color work. *On the Psychological Response to Unknown Proper Names* (pp. 430–434): G. English. – The psychological response to unknown proper names depends on the imaginal type, associations, circumstances, and other highly variable factors. *A Note on the Compensation of Odors* (pp. 435–436): E. B. Titchener. *Book*

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NOTES AND NEWS

HUGO MÜNSTERBERG

1863–1916

Hugo Münsterberg was born in Danzig, Germany, June 1, 1863. After graduating from the Gymnasium of his native city in 1882, he studied philosophy, natural science, and medicine at the Universities of Geneva, Leipzig, and Heidelberg, from 1882 to 1887, obtaining the Ph.D. degree at Leipzig in 1885, and the M.D. degree at Heidelberg in 1887. He entered upon his academic career as *Privat-Docent* in philosophy at the University of Freiburg in 1888, and was promoted to the rank of assistant professor in 1891. In 1892 he was called to Harvard University as professor of psychology and director of the psychological laboratory; he occupied the chair at Harvard continuously until his death, but spent a year abroad as Harvard Exchange Professor at the University of Berlin (1910–11), where in addition to his professorial duties he organized and directed the *Amerika-Institut* of the German government. Professor Münsterberg was vice-president of the International Congress of Arts and Sciences in St. Louis in 1904; of the International Psychological Congress at Paris, 1902; of the American Association for the Advancement of Science, 1906; and of the International Philosophical Congress at Heidelberg, 1908. He was president of the American Psychological Association in 1898, and of the American Philosophical Association in 1908. This career of remarkable activity and achievement was brought to a sudden close on December 16, 1916, when Professor Münsterberg was stricken while addressing a class-room of students at Radcliffe College.

Professor Münsterberg was the author of numerous papers and books on psychological, philosophical, and other topics. His pub-

lished works include the following: *Die Willenshandlung,* 1888; *Beiträge zur experimentellen Psychologie,* I.–III., 1889–92; *Verse* (Hugo Terberg), 1897; *Psychology and Life,* 1899; *Grundzüge der Psychologie,* I., 1900; *American Traits,* 1902; *The Americans,* 1904; *Principles of Art Education,* 1904; *The Eternal Life,* 1905; *Science and Idealism,* 1906; *On the Witness Stand,* 1908; *Aus Deutsch Amerika,* 1908; *Psychotherapy,* 1909; *The Eternal Values,* 1909; *Psychology and the Teacher,* 1909; *American Problems,* 1910; *Vocation and Learning,* 1912; *Psychology and Industrial Efficiency,* 1913; *American Patriotism,* 1913; *Grundzüge der Psychotechnik,* 1914; *Psychology and Social Sanity,* 1914; *Psychology, General and Applied,* 1916.

As the titles of this list indicate, Professor Münsterberg was interested in a wide range and variety of topics. His earlier interests centered in the problems of physiological psychology, where he did pioneer service in opening up such topics as the phenomena of volition to experimental analysis. Then came a period during which his attention turned to the philosophical aspects of his science, and to questions of general human interest. The later years of his life were largely devoted to an endeavor to apply psychology to the practical affairs of life. Beginning with the psychological problems which confront the criminologist and the administrator of justice he gradually extended his investigations to the general question of vocational selection and industrial efficiency. For several years he had been active in a movement which aimed to promote friendly relations between Germany and the United States; and it was in consequence of his activities in this direction and in the direction of the practical application of psychology that he was most widely known. For more than two decades Professor Münsterberg has been a prominent figure in American psychology, where his commanding personality, his originality, his skill in forceful presentation, and his fearless and untiring devotion made him a leader in arousing and stimulating interest in psychological problems.

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Clark University.

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RELIGION AND SOCIETY: A CRITIQUE OF ÉMILE DURKHEIM'S THEORY OF THE ORIGIN AND NATURE OF RELIGION

FEW problems have occupied the minds of thinking men so persistently and intensely as the problem of the origin and nature of religion. The psychologist vies with the sociologist and anthropologist, the philosopher with the philologist and theologian, in their attempts to enhance our comprehension of that peculiar phenomenon, which in its distribution is at least coextensive with man, and possesses, as an emotional value, but few rivals in the entire gamut of psychic experiences. Of the many theories on record three deserve our attention here: naturalism, animism, animatism. According to the naturalistic theory, proclaimed by Max Müller, Kuhn, and others, nature itself is responsible for the religious sentiment. The powers of nature, so often mysterious, inexplicable, gruesome, strange, frightful, arouse in man an emotional response, which constitutes the core of religion. The animistic theory, represented most prominently by Tylor and Spencer, is of interest in two of its aspects. On the one hand, it contains the doctrine of spirits; on the other (in the case of Spencer), a theory of worship. While agreeing with Tylor in the essentials of the animistic doctrine, Spencer derives all forms of worship from the cult of ancestors. The animatistic theory, finally, finds its most enthusiastic representative in R. R. Marett. By the adherents of this doctrine, the most recent and popular of the three, animism is regarded as a mere incident in the development of religion; the fundamental religious concept becomes that of power, impersonal magic potency, *mana,* to which, on the subjective side, corresponds the religious thrill.

Of these theories, only the animatistic one makes any attempt to analyze the religious consciousness, to interpret its nature psychologically. In the vision of the animist and the naturalist, the savage is very much alone with his religion; the social *milieu* is left out altogether; the process, moreover, through which religion comes to be, is conceived of as somewhat in the nature of a conscious rationalistic

act, of a problem, posited and solved. In animatism the emphasis is shifted to the emotional side; we also hear that religion is "congregational" and must be treated sociologically. The derivation of the concept of *mana,* however, remains a purely individual affair; other individuals are understood to be there, but, so far as the origin of *mana* is concerned, their part is that of a stage setting.

An attempt to furnish a socio-psychological interpretation of religion, an attempt much more elaborate and pretentious than any of the above, has recently been made by Émile Durkheim, the French sociologist, in his *La vie religieuse.*[1] The author aims to present a psychological analysis of the religious consciousness as well as an example of the most primitive religious complex. As the sub-title of the work indicates, the scene is laid in Australia, a field eminently within the competence of the author, whose Australian researches have extended over a quarter of a century. Durkheim's argument is, in brief, as follows.

All attempts to account for religion by drawing upon the properties of nature are doomed to failure. The savage knows no natural, hence he can have no conception of the supernatural. Nature, moreover, is utterly devoid of those characteristics which, in themselves, could arouse religious emotions. We must note, in addition, that the most insignificant objects or creatures often figure as recipients of religious regard. Religious values then are not derived from nature, but are superadded upon it. The derivation of fundamental religious conceptions from dreams and similar experiences is also at fault. Religion, with its universal appeal, can not, in the last analysis, be due to an illusion; at the root of it must lie some concrete reality of experience.

Before proceeding with any analysis of religion, we must realize that a definition of religion may not be restricted to its emotional content, but must be extended so as to include the conceptional side of religion, theology, and its activational side, ritual. There is no religion without a church. When analyzed from this point of view the fundamental fact in all religions seems to be a dichotomy of experience into sacred and profane. Acts, things, beings, which are holy, sacred, are juxtaposed to acts, things, beings, which are commonplace, trite, profane. The quest for the origin of religion thus resolves itself into a search for that reality which underlies the dichotomy of experience into sacred and profane.

To find the fundamental core of religion we must turn to a religious complex which can be shown to be primitive. Such a complex is represented by Australian totemism; for totemism is based on the

[1] Émile Durkheim. *Les Formes Elémentaires de la Vie Religieuse: Le Système Totémique en Australie.* Paris: 1912. English tr. by J. Swain. *The Elementary Forms of the Religious Life.* Macmillan. 1915.

clan organization, and the clan is the most primitive social unit. Australian totemism reveals all the traits which, in higher forms, reappear in the world's great religions: it has a social aspect, clan totemism, and an individual aspect, the belief in guardian spirits; it possesses a cosmogony; it involves prayer and sacrifice and a belief in the soul.

An analysis of the totemic complex reveals the fact that the experience of the Australian is conceived as sacred or profane according to its inclusion in or exclusion from the totemic cycle of ideas, emotions, and activities. The totem is the criterion of sacredness. Further examination, moreover, shows that while the totemic emblems, the totems, the totemites, all participate in the sacred realm, the veneration of the clan mates is not directed to any of these beings or things or symbols, as such, but to a sacred and mysterious substance, the "totemic principle," which pervades them all.

A comparison of the "totemic principle" with *mana*, impersonal magic power, believed in by the Indians of North America, the Melanesians, and other peoples, discloses the identity of the two concepts. The "totemic principle" is *mana* which, when dominated by a clan system, as in Australia, appears in what might be called a pluralistic or distributive form; when, on the other hand, the tribe acquires precedence over the clan, as in North America, the *mana* concept, freed from the restraining influence of the social units, appears in its familiar form of an undifferentiated, impersonal, all-pervasive power. What will explain the "totemic principle," then, will explain *mana*, the sacred, religion.

The life of the Australian fluctuates between two radically distinct cycles of experiences. On the one hand, he fulfils the round of his daily pursuits, indifferent, monotonous, drab; on the other hand, he participates, at certain regularly recurring periods, in the ceremonial activities of the tribe, the clan, in the sacred totemic rites. At such periods, the gray monotony of daily experience gives way to excitement, frenzy, the charm of taboo, the passionate whirl of sacred songs and dances. The individual is transformed. His thoughts, emotions, acts, altogether transcend their accustomed level. He feels himself acted upon, carried away, by a power which is of himself, yet also external to him. That power which exalts and constrains arouses the sense of the sacred. Thus religion is born. The rest is infection through association, contact, deliberate transfer. Religion, then, the sacred, *mana*, the "totemic principle," are but so many symbols of society itself, and the most primitive form of a society is the totemic clan.

Durkheim's argument embraces the following fundamental propositions: nature, as such, can not inspire the religious emotion; religion can not, in the last analysis, be based on an illusion, but must be

rooted in a concrete reality, derived from experience; an adequate definition of religion must recognize in it a complex of conceptual, emotional, and activational elements; the fundamental fact in all religions is a dichotomy of experience into sacred and profane; the most primitive religious complex is totemism; the "totemic principle," the source of the sacredness of the totemic cycle, is identical with *mana; mana* is a symbol of society, the "totemic principle," of the clan. We may now take up these propositions, one by one, and subject them to a brief critical analysis.

Nature as such can not inspire the religious emotion.

When dealing with the remote periods in the course of which the birth of religion may be supposed to have occurred, one must of necessity take recourse to inference and analogy. In questions, however, of such generality as man's susceptibility to the impressions derived from his contact with nature, argument by analogy may be accepted as a guide of sufficient reliability. Now, our familiarity with man, modern, ancient, and primitive, leaves no room for doubt that at all times and places man was strongly susceptible to the impressions produced on him by the phenomena of nature and that such impressions assumed in his consciousness the form of quasi-religious sentiments. Earthquakes and the eruptions of volcanoes; tempests, floods, and torrential rains; comets, and the *aurora borealis;* eclipses of the sun and the moon; falling stars; forest and prairie fires, and extreme variations in weather and climate; these and many other manifestations of the powers of nature always did, as they still do, impress themselves on the mind of man and arouse in him that thrill or recoil which constitutes the emotional nucleus of all religion. And what is true of these phenomena applies with a difference of a degree only to those slighter shocks and thrills evoked in man by the contact with his superiors, physically or mentally, whether these be animals or men. May we not, moreover, discern "the psychologist's fallacy" in Durkheim's assertion that primitive man, knowing no natural order, could have no concept of the supernatural? To be sure, the cleavage between the two realms does not, in primitive minds, fall where we would have it; transformations of animals into men and *vice versa* are to the savage natural every-day occurrences, while a visit to a chemical laboratory or even a stroll along Broadway would, for him, be replete with supernatural experiences. The study of primitive custom, mythology, language, moreover, brings irrefutable evidence of the presence of the concepts "natural" and "supernatural" in the mind of the savage. To these we must refer Professor Durkheim for particulars.

Religion can not be based on an illusion, but must be rooted in a concrete basic fact of experience.

This view of Durkheim's might well be discarded as of secondary

importance, but for the significant use made of it in his work. What, may we ask, does the author call an "illusion"? Surely, in a study of religion, we need not be concerned with the objective reality behind the conceptual constructs of the religious consciousness! The religious experience itself *is* the reality which counts. Is it not so with the esthetic experience, or the ethical experience as well? There are, of course, certain objective facts or relations underlying these experiences, but the subjective aspect of them does not in any of these situations, whether religious or esthetic or ethical, represent, or mimic, or symbolize, the objective aspect: it is the reaction of consciousness, in the form of an emotional intellectual complex, which counts.[2] At best, moreover, it is the notion of spirit which is based on what Durkheim calls an illusion, not the emotional thrill or recoil attending the supernatural experience;[3] in the latter, however, our author does not believe, at least not as an ultimate fact.

Religion must be defined as a complex of conceptual, emotional, and activational elements. There is no religion without a Church.

If the above proposition is merely taken to signify that every religion, as an institution, embraces a theology, a faith, a ritual, little exception can be taken to the statement. Although, even in that interpretation, it is true only in a most general way, as a limiting concept, to which every religion, in its institutional aspect, tends to approximate. Otherwise, the three aspects are most unevenly represented in different religions. Thus Buddhism and Confucianism represent conceptual edifices with but little faith and practically no ritual, whereas the religion of the Todas stands for pure ritualism with faith and theology attenuated to scarcely appreciable forms. The error involved in Durkheim's mode of approach is, however, a more serious one. The author defines and analyzes institutional religion, as if the conceptual-emotional-activational complex were a homogeneous phenomenon, culturally, historically, and psychologically, and, therefore, could be studied *in toto*, so to say, and with the use of the same methodological tools. This is very far from being the fact. A religion, like every other institution, represents historically and psychologically a highly heterogeneous complex. In such a complex live emotional elements go hand in hand with "evaporated emotions," serving as a petrified fringe to the religious concept or act; subjective experiences are intermingled with purely

[2] This aspect of religion is clearly brought out in Professor Shotwell's definition: religion is a reaction of mankind to something which is apprehended, but not comprehended. The definition is, however, too wide, for it also covers the esthetic experience, the difference between the two experiences consisting in that in the religious one it is the content, in the esthetic one the form of the "something apprehended" which is reacted upon.

[3] *Cf.* the writer's "Spirit, *Mana*, and the Religious Thrill," This JOURNAL, Vol. XII., pp. 633–636.

objective features; dynamic creative ideas exist side by side with traditional rite and form. Now, different as are the psychic and social mechanisms involved in these different aspects of institutional religion, so also must be the methods by means of which they can be investigated. The dogmas are recorded in written or oral tradition, and to them the scholastic methods of the bookman may well be applied. The rites must be seen and studied on the spot or laboriously reconstructed from written or oral accounts of numerous witnesses. The subjective experiences, finally, are varied in the extreme, and at best only a representative set of them can be secured by intensive investigation, involving great intimacy with the individuals concerned. In the domain of primitive religion, for instance, which for years has occupied the attention of scholars and practical workers of varied interests, training, abilities, only the last few years have brought glimpses into the psyche of the primitive devotee; and what meager results have been achieved, were altogether due to the application of a painstaking linguistic method.[4]

So much for institutional religion. But within every culture religious experiences occur which are but weakly institutionalized, while some of these, although likewise provided with a traditional background, remain almost altogether unsupported by similar experiences of other individuals. This vast domain of religious fact is completely eliminated through Durkheim's formal method.

The cardinal fact in all religions is the dichotomy of experience into sacred and profane.

A partial critique of this proposition is contained in the remarks on the preceding one. On the one hand, all acts, beings, objects, experiences, involved in a religion, are sacred—for such is the nature of the religious. So far, the statement, while true, is tautological. On the other hand, if any religion is analyzed in its concrete cultural setting, one finds that the domain of the sacred does not represent a psychologically homogeneous phenomenon. In Australia, for instance, the sacredness of the magical act and of the magician is not that of the totem; nor the sacredness of the menstrual taboos that of the unclean animals, not eaten because possessed by evil spirits. Similarly, in our own society, the sacredness of the national flag is not that of the law, nor the sacredness of the family name that of the college pin or banner, nor the sacredness of the Church to which one belongs that of one to which he does not belong. The sacred, then, is an aggregate as psychologically heterogeneous as is the profane. To characterize religion, therefore, by a dichotomy of experience into sacred and profane, is to create an artificial situation as well as to

[4] A recent example of the excellent results which may be achieved by that method will be found in Dr. Paul Radin's "Personal Reminiscences of a Winnebago Indian," *Journal of American Folk-Lore*, Vol. XXVI., 1913, pp. 293–319.

establish a presumption in favor of an interpretation of the sacred through some one general principle, a pitfall which Professor Durkheim has not succeeded in evading.

Totemism is the most primitive religious complex.

Durkheim's selection of Australian totemism as the most primitive form of religion and as a proper setting for the origin of the religious emotion is supported by two considerations. Totemism, argues the author, is based on the most primitive type of social unit, the clan, hence totemism itself must be primitive; moreover, totemism, while primitive, embraces all the characteristic traits of the higher religions: hence it is a genuine religion. Durkheim's argument bristles with fallacies. We may not have reached final solutions in our search for the origins of organized society, but that the clan is not a primitive institution we may safely maintain, at the hand of ethnological fact and theory. The most primitive tribes known lack a clan system, the local groups and the family serving as a basis of organization. On the other hand, it is *a priori* obvious that a clan system, or any other system, can not be regarded as a primitive institution, but that the most primitive society must have been based on a *natural* grouping, a natural biological grouping into families, combined with a natural territorial grouping into local communities.[5] But were we to grant, for argument's sake, that the clan is primitive, the admission would not make totemism primitive; for, on the one hand, totemism might be regarded as associated only with highly evolved clan-systems (of which fact, indeed, there is plentiful evidence); on the other, the primitiveness of a social organization is no guarantee of the primitiveness of a form of religion associated with it, just as we find complex social organization coupled with primitive material arts, as in Australia, or primitive social organization with advanced arts, as among the Eskimo. Durkheim's identification of totemism with most primitive religion, moreover, implies an unexpressed belief in the universality of totemism, a thoroughly exploded doctrine, for there is not a shred of evidence that tribes like the Eskimo, or the Thompson, or the Blackfoot, or the Shoshone, ever were totemic.

Again, Durkheim's interpretation of totemism as a genuine religion must be regarded as one of the fatal consequences of his definition of religion. Most of the aspects of totemism carefully passed in review by the author can be shown, or at least suspected, to be of non-totemic origin. So-called "individual totemism" may not be regarded as a derivative of clan totemism. The guardian-spirit belief is most widespread among the Indians of North America, and nowhere does it flourish with greater exuberance than among the tribes

[5] See the writer's "The Social Organization of the Indians of North America," *Journal of American Folk-Lore*, Vol. XXVII., 1914, pp. 422–435.

of the so-called Plateau Area, tribes that are not totemic nor, for all we know, ever were totemic. Again, it would seem, at first sight, that what Durkheim calls the totemic cosmogony is a true offspring of totemism. But when one considers how common an ethnological feature is the cosmological projection of social organization, he is inclined to believe that the totemic cosmogony may also have been sociological, but not totemic in origin, having later become saturated with totemic values. A similar point may be raised with reference to the belief in souls which, in Australia, has a totemic coloring. But if various traits of totemism can be shown to have been non-totemic in origin, having become totemic through subsequent association, such traits may no longer be regarded as organic ingredients of a totemic religion.

What has been said in this section establishes a presumption against Durkheim's ultimate interpretation of religion, in so far as any "origin" of the religious emotion derived from the conditions given by a totemic complex must needs fall short in point of universality and primitiveness.

The "totemic principle" is identical with mana.

The "totemic principle" appears in Durkheim's argument somewhat after the fashion of a *deus ex machina,* and it may well be doubted whether the introduction of this concept does not involve a marked rationalization of the Australian totemic situation. Possibly, however, the author's idea of the "totemic principle" does not really imply that character of abstractness which the text suggests. We may, therefore, accept the term as a conceptualized interpretation of the sacred totemic cycle of participation. But the author identifies the "totemic principle" with *mana,* of which it is a forerunner, the two concepts being identical in content, but different in form. *Mana* is free, the "totemic principle" limited to the clan; *mana* is monistic, the "totemic principle" pluralistic.

At this point decided exception must be taken to the author's position. A full vindication of the concept of *mana*—which, if space permitted, could be shown to represent one of the two cardinal concepts of all religion, the other being the concept of spirit—can not be given here. Suffice it to say that rapidly accumulating ethnological evidence brings abundant proof of the existence of the concept of *mana,* or impersonal power, among primitive peoples. On the other hand, the greater claim to universality and primitiveness of *mana* rather than the "totemic principle," may be gathered from the reflection that whereas the "totemic principle" is indissolubly bound to a definite form of social organization, itself of a limited distribution, *mana* requires nothing but nature, acting, and man's mind, acted upon; whereas the "totemic principle" can be psychologically derived only from the highly specialized conditions given by a totemic

complex, the psychological derivation of the concept of *mana* can be made from almost any conceivable religious situation. *Mana,* then, not the "totemic principle," can claim universality and primitiveness. Hence, even if a similarity of nature were conceded to the two concepts, a psychological derivation of *mana* would not improbably apply also to the "totemic principle"; but the reverse would not be true.[6]

The "totemic principle" is a symbol of the clan; the reality underlying religion is society.

This proposition represents the fundamental and ultimate aspect of Durkheim's theory. The thought is bald and original. No one before Durkheim, nor the author himself in his other works, has gone so far in effacing the individual in favor of the social. If the author's solution were found to be sound, a most significant step would have been made towards a final comprehension of the two problems which through the ages have occupied the minds of legions of thinkers: the problem of the relation of the individual to society, and that of the nature and origin of religion.

Three sets of arguments may be advanced against Durkheim's position: an ethnological one, a sociological one, and a psychological one.

In the first place, then, Durkheim's theory is by the very nature of his argument restricted to a totemic and ceremonial situation; it will, therefore, not hold for those tribes and areas which lack totemism as well as ceremonialism *en masse.* To make the point more specific: how does the case stand, for instance, in North America? The tribes of the Pacific Northwest, of the Southwest, part of the Plains tribes, those of the Southeast, and the Iroquois combine highly complex social systems with elaborate ceremonialism *en masse.* Most of these tribes are totemic. A large number of tribes, on the other hand, lack both of these features. To these belong the Eskimo of the Arctic littoral, the tribes of the Plateau, of California, and many isolated groups throughout the North American area. Among these tribes we find neither complex social organization nor elaborate ceremonialism. Whence, then—if we follow Durkheim—their religions? Unless indeed they have borrowed all their religious conceptions, nay, the very emotions of the religious thrill, from tribes more fortunately situated! So far the ethnological argument.

In the second place, the conception of the social, of society, in Durkheim's theory is strangely narrow. Notwithstanding the tremendous importance ascribed to it, society for Durkheim is but a

[6] *Cf.* the writer's "Spirit, *Mana,* and the Religious Thrill," This JOURNAL, Vol. XII., 1915, pp. 632–639. The reader's attention is also directed to Dr. Paul Radin's violent attack on the *Mana* Concept in "Religions of the North American Indians," *Journal of American Folk-Lore,* Vol. XXVII., 1914, pp. 344–351.

sublimated crowd, while the social setting is the crowd-psychological situation. Society as a cultural, historical complex, society as the carrier of tradition, as the legislator, judge, as the standard of action, as public opinion; society in all of these varied and significant manifestations, which surely are of prime concern to the individual, does not figure in Durkheim's theory. All the marvels of social control are achieved through the medium of the crowd-psychological situation. Durkheim's theory, then, is a crowd-psychological one; but is his crowd-psychology sound? The author will have us believe that the religious thrill, the sense of the sacred, arises from the reaction of the individual consciousness to social pressure, or rather from the ratiocination of that reaction. The elements involved in the situation utilized in the author's theory are still to be found in society, hence his contention is subject to verification by our modern experience. Now, how does the individual react to social pressure which overwhelms him in a crowd-psychological situation, and what construction does he place on his reaction? The reaction is very much as Durkheim has described it: in the theater, at a political meeting, in a mob, at a revival, in church, in a panic, the action of the group on the individual is characteristic and decisive. But how does he rationalize his participation in the group action or experience? Not by *contrasting* his daily life with the special crowd situation, nor by representing himself as actuated upon by a superior and external power—quite on the contrary: the individual *identifies* himself with the group, with the crowd; he represents himself as sharing in the power which is of the crowd, of the group. *We* thought, *we* felt, *we* did, is for him descriptive also of his own part in the proceedings. Social settings of this variety are so constant, so common an experience in the life of man, primitive or modern, that the average, that is, not exceptionally reflective individual, never thinks of contrasting these experiences with others, or of regarding his crowd or group self as transcending the self of his daily routine. On the contrary, the crowd or group self *is* the self *par excellence,* as well as the self at its best. Again, the crowd or group setting obviously does not create the specific psychic state involved. The joyful ecstasy of a jubilant crowd remains a feeling of joy; a panic of fear is fear; the hatred of a lynching mob is hatred; the adoration of a religious gathering is adoration. In all of these instances, and innumerable others, the specific emotion experienced is not of crowd derivation. What is common in the above situations is the crowd psychology: through a summation of stimuli, and through imitation, the emotions become intensified; the higher mental processes, involving deliberation and concentration, become paralyzed; the instinctive and reflexive responses, on the contrary, which have through past ages become attuned to the particular emotion involved, rise into prominence.

What results then is an intensified expression of a given emotion in terms of instinctive and reflexive reactions, reactions, that is, which belong to a relatively low level in human development. But the specific emotion so expressed is not born of the crowd, and differs in different crowd-psychological situations. Thus, a series of corroborees does not make an *intichiuma*, nor do the secular dances of the North American Indians become identified with the religious dances. A crowd-psychological situation may intensify or even transform a religious thrill, but it can not create one. Thus the sociological argument is also opposed to Durkheim's theory.

In the third place, finally, we must take issue with the author on a psychological ground. The psychological argument has in part been forestalled in another section. The author's theory runs counter to the verdict of experience, ancient and modern, in denying nature the power to impress, shock, and thrill man, thus engendering in his psyche the emotional nucleus of the religious sentiment. The author, moreover, fails to do justice to the contribution of the individual to religious experience. While the religious emotion, deeply rooted as it is in instinctive reactions reaching far back into human and possibly pre-human history, is to a marked degree amenable to the transformations conditioned by the crowd, the mob, and other more complex types of social setting; religious experience has, on the other hand, been enriched, elaborated, refined, by the spiritual contributions of individuals. These were either individuals of average potentialities for religious experience, but placed in unusual circumstances, or they belonged to that group of exceptional individuals who, at all times and places, have shown uncommon proclivities for the religious life. The first category is exemplified by the Indian youth who, at the dawn of maturity, retires to a shanty in the woods, fasts, purifies himself until he is so pure that "the spirits can see through him"; then the vision of his life comes to him in the shape of a spiritual animal or object; he receives a supernatural revelation of certain powers which henceforth are his for life, and never, after this, may he kill or eat the earthly representatives of the animal which, in spirit form, thus came to visit him in his vision.[7] To the second category of individuals belongs that limited group of men from which history has recruited her religious teachers and reformers, fanatics and miracle workers, revivalists, founders and destroyers of religions, prophets and saints. Now, it is emphatically characteristic of both of these categories of men (and women) that, temporarily or permanently, they shun the crowd, they flee from the world, they live in solitude, they are proof against religious settings except those of their own making; in their psychic constitution lie

[7] These guardian spirit experiences do not, indeed, always take the particular form described above, but the instance may be regarded as fairly typical.

infinite potentialities of religious experience and ecstasy. Their god is within them. The lives of such as they constitute a glaring refutation of Durkheim's theory.[8]

Our critique is drawing to a close. The arguments advanced seem to show that Durkheim's theory of religion does not bear out the expectations aroused by the wisdom, scholarship, and noted brilliancy of the author. Durkheim errs in denying the savage the ability to differentiate between the natural and the supernatural, and in denying nature the power to cause the religious thrill; he errs in accepting a mongrel definition of religion and in regarding the dichotomy of experience into sacred and profane as a psychologically univocal determination of all religion; he errs in identifying primitive religion with totemism and the "totemic principle" with *mana;* he errs, finally, in claiming for *mana,* and its emotional concomitant, the religious thrill, an exclusively crowd-psychological origin.

Thus Durkheim does not succeed in furnishing a satisfactory solution of either of the two problems which stand in the center of his interest: the relation of individual to social experience and the interpretation of the nature and origin of the religious sentiment. Sharp as is the author's wit and brilliant as is his argumentation, one closes the book with a melancholy assurance that Durkheim has left these two perennial problems where he found them.

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THE REVIVAL OF THE ONTOLOGICAL ARGUMENT

NOTWITHSTANDING the fact that as staunch a defender of demonstrative theism as Professor Flint found himself constrained to say that "theism, according to the view now expressed, is not vitally interested in the fate of the so-called ontological argument,"[1] we find the argument receiving serious attention in recent suggestive contributions to the philosophy of religion, though from widely differing points of view.[2] Dr. Galloway, following Lotze, sees

[8] It may be of interest to add here that Durkheim uses his sociologically derived religious concepts as stepping stones toward a similar derivation of the fundamental categories of human thought. The theme is broached repeatedly in the author's study, but nowhere is it treated with any degree of fullness. One rather anticipates a future elaborate work on the subject. Hence a criticism at this time would perhaps be premature as well as unfair. *Cf.,* however, the writer's remarks in a review of Durkheim's book, *American Anthropologist,* Vol. 17, 1915, pp. 731–733.

[1] *Theism,* p. 267.

[2] George Galloway, *The Philosophy of Religion,* New York, 1914. W. E. Hocking, *The Meaning of God in Human Experience,* New Haven, 1911. Georg Wobbermin, *Der christliche Gottesglaube,* Leipzig, 1911.

the source of the vitality of the ontological argument in the "rooted disinclination of the human spirit to believe that the supreme being, who is the supreme value, is only a fiction of the mind."[3] The nerve of the argument, he thinks, is found in the fact that we feel impelled to ascribe reality to that which is made the object of religious faith. To believe in values which are felt to be illusory would be a self-stultification. For Professor Wobbermin who, with Tolstoi, sees in religion the only escape from the alternatives of *tierische Stumpfheit oder Selbstmord,*[4] the ontological argument, like all religious phenomena, is but an expression of the eternal Yea of human life. The logical cogency of the ontological or other theistic arguments is not of primary concern. The ultimate problem is "whence the idea of God itself? Yea, rather, whence the mere possibility of this idea" (p. 113)? No rational interpretation of sense-data suffices to explain its *raison d'être,* no philosophy of society. Its origin is to be sought in fundamental human needs. The will to believe is but a phase of the will to live.

Dr. Galloway and Professor Wobbermin subordinate the argument to emotional and volitional needs. For Professor Hocking, however, it is the most compelling of all proofs for God's existence. It is in fact the only argument "which is wholly faithful to the history, the anthropology, of religion. It is the only proof of God."[5] The chapter on the ontological argument forms in a way the climax of his most stimulating book. With the validity of his interpretation of the ontological argument stands or falls his system of philosophy. The version presented by Professor Hocking is not essentially new; it has been advanced in one form or another by Pfleiderer and other Hegelians. It seems, however, entitled to serious consideration since the author has brought to its support a wide acquaintance with the history and psychology of religion, keen powers of analysis, and a profound insight into the metaphysical implications of religious experience.

My apologies are due Professor Hocking if occasionally I have missed his thought. In spite of great vigor of style and wealth of illustrations one detects at times a certain academic fondness for subtlety of phraseology. This when combined with his fundamentally mystical point of view and the composite nature of his philosophy makes it very difficult at times to follow his argument. The "candid-humble philosopher," to whom Professor Hocking alludes, is perplexed when told that his soul may be filled with a "trooping invasion of the concrete fullness of eternity" (p. 106) or when it is suggested that he "take experience breast-forwardly, oriented by the

[3] *Op. cit.*, p. 387.
[4] *Op. cit.*, p. 118.
[5] *Op. cit.*, p. 307.

universal or common eye which the fundamental God-consciousness gives'' (p. 296). It must be confessed that such Jovian utterances are more interesting than illuminating.

''The object of certain knowledge,'' says Professor Hocking, ''has this threefold structure, self, nature, and other mind; and God, the appropriate object of ontological proof, includes these three'' (p. 315). His philosophy, then, may be visualized under the form of a triangular pyramid, the base being composed of self, society, and nature, while God or the absolute other forms the apex. The God-idea is therefore fundamental for his entire philosophy. God is the *fons et origo* of all knowledge of self, of society, and of nature; He is the absolute other, the ultimate reality. God is the presupposition of self-consciousness and appears in ''the abiding sense of what stability and certainty we have as we move about among men and things'' (p. 295); God is ''present in all experience as that by which I too may firmly conceive that experience from the outside'' (p. 224). Nature with her laws, her activity, her permanency, is ''held empirically in place by the active decisiveness of outer reality'' (p. 287). It is only through a ''prior recognition of other mind that my physical experience acquires objectivity at all'' (p. 288). A knowledge of the absolute other is also a prerequisite to a knowledge of other selves. ''It is through the knowledge of God that I am able to know men; not first through the knowledge of men that I am able to know or imagine God'' (p. 298). In fine, ''God is known as that of which I am primarily certain; and being certain, am certain of self and of my world of men and men's objects'' (p. 296).

The starting-point of Professor Hocking's thought, therefore, is the contention of the ontological argument that the idea of God implies his reality. But the ''leap from idea to reality'' is not made, after the fashion of Anselm and Descartes, on the basis of the sheer logical perfection of the idea itself. The implications of the experience in which the idea functions are made to point to something more than ''mere idea.'' The absolute other or God in the form of otherness is a necessary element in all experience. This *social* element, the fact that ''man knows well that he is not alone,'' is an irreducible factor in all experience; ''nor does this social experience ever *arise.*'' When the individual becomes self-conscious he finds the alter-pole firmly established as a constituent element in the self. The idea of the absolute other or God is therefore a necessary inference from experience. ''But in finding God as a necessary object of experience, have we not, in a way sufficient and decisive, proved his existence'' (p. 302)? The old deductive statement of the argument was ''I have an idea of God, therefore God exists.'' We are nearer the truth, thinks Professor Hocking, when we say, ''I have an idea of God, therefore I have an experience of God'' (p. 314). It follows from this that

"reality can only be proved by the ontological argument; and conversely, the ontological argument can only be applied to reality" (*ibid*).

Professor Hocking thus plants himself squarely upon a mystical and empirical basis; his restatement of the old argument, therefore, has a realistic note that is particularly refreshing. Men have vainly sought God through the refinements of logic, but as thought progresses he becomes more impersonal, more evanescent. In reality God is nigh to all, closer than breathing, nearer than thought. This mystical note we often find warring with the author's keen intellectualism. He confesses that this "intellectual business is . . . an eminently dust-raising pursuit." Hence the rather damaging admission that "intellectual advance must always involve loss to religion." The grasp of God which the child has in "solid proportions" is lost "amid the bustle of scientific labor: it needs in a measure to be looked away to; it is best found in the pauses of the weaving process, a matter for the most part of holiday survey" (pp. 98 ff). It is the old cry of the mystic who finds his God in the loneliness of the monk's cell, in the isolation of the mountain top, in the child's simple fancy or in the intuitions of the philosopher. In every case God is most in evidence in the margin of things, in the eddies of existence, remote from the swift strong tide of life.

Professor Hocking's statement of the ontological argument presupposes an idealistic metaphysics. In fact, almost every form of idealism has been utilized in this work.[6] Subjective idealism of the Berkeleyan type is the immediate result of identifying idea with reality. To be sure we are told that "we can not think of any idea that is not an idea of some thing." We get the impression that ideas are set over against things (p. 79). But this very thing-ness of nature, the "objectivity" and literalness of sensation, is not due to physical reality; it is the "unmistakable aspect of other mind" (p. 284). A sort of mystical idealism is then called upon to bridge the gap between the objective idealism which makes nature the manifestation of other mind and the subjective idealism which finds God in the idea only. For "no form of the argument can be valid which finds God at the level of thought only, and not at the level of sensation" (p. 313). The fact that nature depends for its "objectivity" upon other mind is not an inference, but "an immediate experience." "I do not first know my physical world as a world of *objects* and then as a world of *shared* objects: it is through a prior recognition of the presence of other mind that my physical experience acquires objectivity at all" (p. 288). The "total world-fact" of men and things is potentially present in my whole-idea and depends for its reality upon

[6] Consult D. C. Macintosh, *The Problem of Knowledge*, pp. 161–180, for a more detailed analysis, also *Philosophical Review*, Vol. XXIII., pp. 27–47.

this idea. "My real must already be given in order that my idea may be found real." That is, "if my idea of God is real, it is real in experience" (p. 313).

In spite of its initial realistic note Professor Hocking's development of the ontological argument reveals a pronounced *a priorism.* He speaks of a "universal and primordial knowledge" of God which all men share, a "universal revelation" (p. 230). All the criteria by which we know other minds "suppose the minds to be furnished in advance with the *idea* of an other mind" (p. 250). This *a priori* content of experience presents two aspects which are ultimately the same, namely, the *logical* and the *social.* If we look at this "universal and primordial" God-idea from the point of view of its origin and setting we discover that the original source of the knowledge of God is an experience which might be described as a feeling of *"not being alone in knowing the world"* (p. 236). God in this sense is the great socius, the infinite other, the awareness of whom is the necessary condition of the understanding of all social experiences. This awareness of the infinite socius emerges in contact with nature as well as society, but "we can not keep them apart nor assign to either a priority over the other" (p. 231). Social experience only becomes religious "when it is at the same time an experience of nature power" (p. 232). All unconsciously, perhaps, Professor Hocking even ascribes to nature the chief rôle as the medium through which the idea of the infinite other finds expression. Nature furnishes through her "impressive objective facts" (p. 302) a "literalness" a permanent setting not found in the changing social order. "Nature, pungent and intense with sensation, is an integral part of the knowledge of another mind" and for this reason nature provides "the very foundations of personality" (p. 261). It is undoubtedly the realistic strain in Professor Hocking's thought that has influenced him to give nature the leading part in the mediation of the knowledge of the infinite other. "Through no historical retracings," however, "shall we discover the silent entrance into nature" of the infinite other. The problem is ultimately one of the content of consciousness itself, of the intuitive insight of the mystic.

In support of the reality of this infinite other Professor Hocking makes skilful use of the metaphysical implications of social experience. He bases his inference as to the existence of God upon an implication of the psychology of the self. In the element of *otherness,* the alter-pole of the self and an irreducible factor in all consciousness, he finds indisputable evidence for the factual existence of God. The leap from the fact of otherness in experience to the infinite other involves at least two assumptions. It implies first that the idea of an infinite other is a legitimate inference from social experience and secondly that we have immediate or intuitive knowledge of this

infinite other. The latter contention is the one of primary interest for Professor Hocking. He is tireless in his insistence upon the immediacy of our knowledge of the absolute other; "my idea of other mind is at the same time an experience of other mind" (p. 278). He insists that this idea of other mind is the logical prius of any experience, intuitive or otherwise, that we may have of other mind, although the psychological analysis of mystical experiences seems to show that they are not the source of new truth, but merely re-evaluate existing contents of knowledge.

Is the idea of an infinite other, however, a legitimate inference from social experience? Baldwin, Royce, McDougall and others have familiarized us with the fact that all experience is in a sense social experience. The ego and the alter arise and develop together as constituent elements of the self. My own individual self is composed of "social copy" which I take over imitatively from my fellows and build into the fabric of my personality. Not only the content, but also the orientation of the growing self, its measure of values, its ends to be striven for, are derived largely from others. What is now part of myself was originally part of other-self. All that I hope to become is largely my thought of others as so many possible ways of attaining self-realization. Society and the race are in this sense the socius, the total other, by which my life is shaped, interpreted, evaluated. But no amount of emphasis of the immediacy of the alter-phase of experience, of its "primordial and universal" nature, of its necessary and determinative function, can justify us in reifying and making it identical with the absolute other or God. It may very well be true that the idea of God implies some sort of a social order, but it can not be said that the existence of God is a necessary implication of social experience. We can easily imagine a social order composed of finite selves, in which all the implications of otherness for the reality of my own experiences and of nature would be satisfied. A godless world does not necessarily cease to be a social or a real world, though it may be poverty-stricken.

We are reminded of Kant's dogmatism as to the *a priori* forms of knowledge when Professor Hocking tells us that all the various kinds of social experience "suppose the mind to be furnished in advance with an *idea* of an other mind" (p. 250). Such an *a priori* explanation of the origin of the God-idea is opposed by the facts of genetic psychology and comparative religion. The God-idea is not primary. It is derived. We are to see in it not the *primum mobile* of our thought, but an effect of the force that has created thought. Man from the very dawn of religious consciousness has been interested not in the idea of God, but in the satisfaction of inner motives and needs of which that idea is an expression. Man is not a born manipulator of abstract concepts and is only driven to abstract thought by

the dire necessities of existence. The need for rationalization itself could not be felt until after a long and slow accumulation of experience. It may be that the idea of an absolute other is a latent mental possibility for child or savage, but it will always remain latent until a richer social setting and the consequent expansion of the self present the problem in the attempted solution of which the idea is born. As Hegel observes, it is at twilight that the owl of Minerva takes its flight. The philosophers and theologians with their absolute others and ontological speculations only arrive after the creative religious *élan* has done its work.

But this "universal and primordial" God-idea has its logical as well as its social implications. Professor Hocking contends that it functions from the beginning of experience as the whole-idea or "germ-cell" of knowledge (p. 95), our fundamental intellectual instrument. The God-idea is man's "explorative idea" (p. 327). It is his measure of values. An object is real directly in proportion to the extent to which the whole-idea enters into it (p. 130). Knowledge grows only in the "mid-world" between the self and the changeless absolute, grows by faithfully reproducing the eternal pattern of the whole, "the simple-total frame of things" which is "huge, inevitable, abiding." This whole-idea is related to other ideas as "permanent subject" to "possible predicates." The whole-idea abides while its predicates shift in kaleidoscopic fashion. The landscape of knowledge varies, but the sky-line is eternally the same.

Professor Hocking contends that in the whole-idea which is a universal and primordial fact of consciousness, we not only envisage reality in its entirety, but we are immediately aware of its existence. Here, as in the case of the absolute other, we must examine the logical content and the cognitive significance of the whole-idea before we can entertain the mystic's claim that through this idea he gains an immediate experience of reality as a whole. Professor Hocking in his eagerness to emphasize the immediacy of experience is in danger of overlooking the psychological and epistemological difficulties of his problem. The contention that the child's knowledge begins with the idea of reality as a whole (p. 95) is misleading. Is the whole-idea of the child simply his vague awareness of experience as a whole; is it his limited whole-idea plus the possible modifications of that idea by later experience; or is it the highly abstract whole-idea of the absolute idealist read into the undeveloped consciousness of the child? Does the child start life with the subtle and finished product of the metaphysician's brain or do the forms of his thought, such as wholeness, identity, unity, causation, and the like gradually take definite shape through his contact with men and things? Granting that the crude whole-idea is present at the beginning of experience, can we say that the child or the man for that matter has one whole-idea *par*

excellence? Is not every whole-idea relative and do not its use and validity depend upon its being restricted to a definite context of experience? The child instead of having only one has many whole-ideas and they are constantly changing. We can only capitalize one form of thought such as wholeness or causation or substance and make that the measure of all reality by forfeiting the richness and fullness of reality itself.

Professor Hocking's contention as to the "primordial" character of the whole-idea, its transcendent importance as forming the beginning and setting the goal for all knowledge, its immediate witness to reality as a whole, is strangely inconsistent with the statement that it "has its vicissitudes, its fortune to make and ever to re-make, its frequent seeming life and death struggles" (p. 99). How are we to explain these vicissitudes? If these struggles are only apparent and touch not the integrity of absolute reality that pursues its course with metaphysical serenity, fancy free, then after all are we not living in a Plato's cave, the dupes of dancing shadows? If on the other hand the "life and death struggles" of metaphysical systems are actual reflections in our thought-life of the diversity and contrariety of reality itself may we not, in Professor Hocking's own words, characterize his praise of the charms of his sphinx-like absolute other as "a surfeited agglomerate of laudatory epithets"?

Professor Hocking's reply to these animadversions would probably be "none of these things moves me." He will contend doubtless that the citadel of his position has not yet been taken, namely, the immediate awareness of God's reality gained through mystical intuition. Professor Hocking is continually pushing back this intuitive knowledge of God's existence to the beginnings of experience; "the primary object of acquaintance for any finite knower is his environment of *other mind*" (p. 254). Yet it is not a question even in his own mind of the priority in time or of the function of the God-idea in the mental development either of the individual or of the race. Primarily it is a question of the intimacy and the immediacy of the experience of the God-idea itself. "In any sense in which I can imagine, or think, or conceive an experience of other mind, in that same sense I *have* an experience of other mind, apart from which I should have no such idea" (p. 274). The idea carries with it its immediate witness to the reality of the religious object. This feeling of reality, being the pre-condition of all experience and all knowledge, can not be repudiated. It would be equivalent to the repudiation of the immediate witness of the senses to the reality of the sense-object.

Professor Hocking's analysis of the ontological argument finally resolves itself then into the question of the cognitive value of the mystical experience. He has carefully laid the basis for his fundamental thesis in his interpretation of feeling. "Cognizance and feel-

ing are but different stages of the *same thing*" (p. 68). "Religious feeling . . . like other feeling, is all idea-material, idea-activity" (p. 73). Feeling, in other words, is but inarticulate idea and vanishes with the complete rationalization of the situation. Through this identification of feeling with idea it becomes possible to claim the immediacy and finality of feeling as evidence of a cognitive content and at the same time to explain the vagueness of that content on the ground of incomplete rationalization. No such confusing of the rôles of thought and feeling, however, can ever justify the contention that feeling gives us ontological information. The examination of mystical experiences seems to show that the mystic brings his philosophical or theological ideas to the situation. They may undergo complete re-interpretation, but there is no contribution to their cognitive content. Saint Theresa, who fell into a trance while puzzling over the Trinity, had all doubts dispelled, but her theological ideas were not altered by the emotional experience.

Professor Hocking has not escaped the weaknesses that beset the mystic, notwithstanding that fact that he warns against them (pp. 352 ff.). Like all mystics, he seems unaware that in describing the content of the God-idea he is using thoroughly conventional and traditional terms. He finds the God-idea in the "abiding sense of what stability and certainty we have, as we move about among men and things" (p. 295). Again, God is "my persistent sense of reality," or my feeling of "responsibility and dependence." It is still further in evidence when I realize that "what creativity I have and must have is built upon a continuous docility" (p. 296). He confesses that anything new or unique in this knowledge is not "conspicuous in experience," and "as permanent knowledge, with which we forever begin, and *with* which we forever think our world, we shall not expect it to be conspicuous" (p. 295). Is this not, however, a practical acknowledgment that nothing original or characteristic is revealed in our actual experience of the God-idea? Furthermore, Professor Hocking's own phraseology seems to indicate that it is the emotional accompaniment rather than the ideational element which is of primary interest to him. When he speaks of a vision that admits into the soul "some trooping invasion of the concrete fullness of eternity" or when he describes the felt presence of God as "my disposition to take experience with *full empirical openness,* breastforwardly, oriented by the universal or common eye which the fundamental God-consciousness gives me" the ideational content of such language is almost ridiculous in its obscurity, its swirling toploftiness. But viewed as a vehicle for the expression of the emotional life this very vagueness is justifiable, even necessary. We must insist, however, that the mystic do not confuse the emotional satisfactions of his mystical experience with the logically compelling nature of its

ideational framework. If we wish to get the most out of Wordsworth's *Intimations of Immortality* we must recognize that it is poetry, not science or philosophy.

Professor Hocking's emphasis of mystical intuition subjects him to a more serious criticism, namely, that he has neglected the part that man plays in shaping his religious ideas. We are told that nature as the objective manifestation of the absolute other first aroused the God-idea in man. But man in passive contact with an objective world would never become a religious being. It was only when man began to *humanize* these contacts with nature, when he built for himself altars, carved for himself images and cried "these be thy gods, O Israel," that religion was born. Man did not create all the elements in the problem of existence, but the statements of that problem and the attempts at a solution are his work. Man's God-idea is but a proposed solution of one phase of the problem of existence. Instead, therefore, of having one "universal and primordial," God-idea, we have an endless sequence of deities, a *Geburt der Götter,* followed by the inevitable *Götterdämmerung.* So far as human experience goes the vitality of these god-ideas is not traceable to an aboriginal God-idea of which they are imperfect replicas, but to the fact that somewhere and at some time, either past or present, groups of men with loyal hearts addressed their gods as "*our* God whom *we* serve." Each age creates its God-idea. In a world "strewn with dead gods" it is not a question as to the ability to intuit mystically a changeless absolute; it is a question of re-evaluation in terms of accumulated experiences. Should man ever lose this need and this capacity for re-evaluating and reformulating his religious ideas religion itself would cease to be. A God who is taken over bodily with all qualities unchanged from another age has already entered upon the period of senescence and the creed that claims to give an infallible enumeration of these qualities has thereby forfeited its claim upon our intellectual allegiance.

The absolute other of Professor Hocking is a brilliant idealization of the socius phase of the mystical religious experience. His infinite other differs, to be sure, from the absolute of Plotinus, of Spinoza, or of Hegel, but those differences are a fairly accurate measure of the widening and deepening of human experience which the centuries have brought. Each thinker has given us his interpretation of the absolute, the infinite socius, which the mystic consciousness of his age demanded; but in each case it is an idealized self, the "permanent Me which I seek." Hence the note of intimacy and of immediacy which Professor Hocking thinks proves the reality of the absolute other, the "objectivity" of God. The finite socius projects into the absolute socius its own feelings, its particular social situations, its scientific terminology, its modern values. The finite socius

demands a sympathetic background for its feeble strivings. "The small launches of postulation which we make depend on being quickly caught up and floated by a tide of corroboration hailing from beyond ourselves" (p. 153). The authority of the absolute is therefore really self-authority; to obey the great socius is to obey my better self. In him the self literally lives and moves and has its being. The mystic's at-home-ness with his absolute is due to an actual at-one-ness based on no metaphysical illusion, but upon psychological facts.

The mystical note is always present where there is a suggestion of the unknown, of uncharted reality, of infinite otherness and the like. This uncharted reality represents limitless possibilities for self-expansion, creativity, spontaneity, in a word for *the fullness of life,* The very existence of this reality is potential, contingent in a measure at least upon the expansive powers of the self. The mystical content of the Christian's God and also his reality are measured in terms of the potentialities he offers for self-perfection: "Be ye perfect even as your Father in heaven is perfect." The deity of Augustine or of Spinoza was conceived in terms of the exhaustless possibilities he offered for flights of the speculative imagination or for an eternity of intellectual appropriation of his truth and beauty. It may be seriously doubted whether any other form of reality can ever be attributed to God except that which is measured in terms of the creativity and the resulting expansion of the self which he elicits. Professor Hocking's infinite other is essentially a mystical attribution of reality to the background of the self, to the marginal region of social experience in the interest of that unfolding social experience itself. The reality of his infinite other is exhausted largely in the richer *mise en scène* provided for the drama of human life. For certain types of religious imagination this rich setting of spiritual forces and spiritual potentialities is absolutely necessary. "This is the victory that overcomes the world, even your faith."

Herein lies the pragmatic justification of mysticism and the mystical temperament with its valuable contributions to the religious life. For this reason also the mystic may be pardoned the ineffable assurance with which he asserts the reality of this realm of overlapping things, though a cold psychological analysis of the "objectivity" of his infinite other may reveal only the existence of stubborn temperamental needs which demand a larger freer air for the full and sympathetic unfolding of the spiritual life. For the mystic a world without an absolute other is an immoral world. The God, says Professor Hocking, "who merely *is,* as our absolute other, is by that fact both promotive of our weal and of our morality." God's ability to embody the absolute moral ideal is conditioned upon his "standing outside the arena of human effort with its contrasts of good and evil"

(p. 331). To make him party to the strife would strip him of the charm and inspirational power of his mystical, infinite otherness. Nietzsche, to be sure, expressed compassion for the God who is not allowed to sin. But Nietzsche would hardly have done so had he not missed the mystical appeal of an absolute other who lies *jenseits von Gut und Boese.* James's democratic temperament also reacted against such a God because he is too much of a "gentleman." But the mystic's God is essentially a "gentleman" and an aristocrat. His infinite otherness would not allow him to play any other part in the drama of the universe. We may pity his dignified helplessness, but his immaculate aloofness at least preserves him from all contamination. He offers man an escape from the pettiness and the nagging limitations of existence. Universality, finality, in a word the *indefeasible,* are not these parts of the ideal? Is it not true, *was sich nie und nirgends hat begeben das allein veraltet nie?* Or is this merely a bit of cleverly devised self-deception? Some of the finest expressions of religious genius are born apparently of the grim determination not to acknowledge the essential limitations of humanity.

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REVIEWS AND ABSTRACTS OF LITERATURE

Modern Philosophers and Lectures on Bergson. HARALD HÖFFDING. Tr. by ALFRED C. MASON. London and New York: Macmillan and Company. 1915. Pp. xii + 317.

Professor Höffding's *Modern Philosophers* aims to introduce its readers to the world of contemporary thought by setting before them the views of eighteen eminent thinkers whose chief works fall in the period of the past thirty-six years. Wundt, Ardigó, Bradley, Taine, Renan, Fouillée, Renouvier, Boutroux, Clerk Maxwell, Mach, Hertz, Ostwald, Avenarius, Guyau, Nietzsche, Eucken, and William James, figure in the list, as well as Bergson, to whom a relatively considerable space is allotted. Approximately in so far as it would be possible to compass an adequate and delicate discussion of eighteen philosophies in the space of three hundred pages Professor Höffding has accomplished this task. His subjects are reduced to a common denominator of generality rather broad; but on the other hand this generality is redeemed by Professor Höffding's talent of exposition, by his erudition, by his long-practised faculty of insight, and by the admirable temper of his writing, a temper that is affable, genial, and serene.

Professor Höffding divides his philosophers into three groups: an "objective-systematic" group, including among others Bradley and Wundt, and defined by its attempted elucidation of "the problem of existence"; an "epistemologico-biological" group, including Avenarius and Ostwald, for which "the problem of knowledge takes pride of place"; and a third group, including Eucken and James, which "busies itself essentially with the problem of value." But Professor Höffding warns us to set no great store by this classification inasmuch as "the most recent philosophical speculation . . . is more difficult to classify than the philosophy of earlier times." "The essence and operation of both thought and existence," he continues, "are far too many-sided for any such external arrangement to be possible. One fact in particular is always claiming fresh attention, namely, how a philosophical movement is as much a thought-construction as a sign of the times. Philosophy is a treatment of problems as well as a symptom, and at the present day its appearance in this twofold rôle is sharply defined. Partly it is that existence presents to us a continually increasing complexity of aspects in ever greater depth and multiformity. Partly it is that we are paying more and more attention to the cooperation and consonance of the subjective factors in all thought. In both connections—we may call them respectively the objective and the subjective aspects of philosophy—contemporary philosophy advances with firmer tread than did that of former times."

Professor Höffding expounds, summarizes, criticizes, scattering a great number of interesting judgments as he goes. Wundt's philosophy he regards as typical of contemporary thought. Bradley he judges to be more of a Kantian than a Hegelian. He writes that "Eucken's place in the modern philosophy of religion is preeminently determined by his decided conviction that values can only be supported by the acceptance of a higher reality, in which the spiritual life, which in experience appears scattered and under changing forms, continues to exist in the form of unity and eternity." William James, he says, combines "comprehensive knowledge with great capacity of observation, keen criticism with idealistic enthusiasm, impartiality with earnest conviction." Professor Höffding finds in Bergson's thought a reaction against rationalism and realism. He describes Bergson as considering that intelligence is unreliable in so far as it is practical, and charges him with a false abstraction in separating memory from action. *Time and Free-Will* is to Professor Höffding's mind the most important of all of Bergson's contributions to philosophy.

On the whole Professor Höffding finds so much good in each one of his authors that he would apparently resign himself willingly to cherishing indefinitely a multitude of eighteen philosophies—or more.

The English translation is occasionally vague; otherwise it is satisfactory.

GEORGE PECKHAM.

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Backward Children. ARTHUR HOLMES. Childhood and Youth Series. Indianapolis: The Bobbs-Merrill Company. 1916. Pp. 239.

It is especially fitting that Dr. Holmes should be asked to write concerning backward children. His work in the psychological clinic of the University of Pennsylvania has given him a wealth of enviable experience; and to this opportunity was added a freedom of action in testing methods of treatment such as is rarely granted to a teacher. He therefore came to the preparation of his book so full of facts that in reading it one has the feeling of satisfaction that accompanies proof.

Naturally Dr. Holmes begins with a discussion of mental tests—"measuring rods for children." Backwardness, he says, is "a relative matter and not an absolute condition." While reading his discussion of the social standard in the home, and the age and progress standards, one is reminded of the misjudged children—of George Eliot's difficulty in learning to read, of Linnæus, whom his teacher would have made into a shoe-cobbler, of the timid, "backward" Harriet Martineau, and of David Hume, characterized by his mother as "a good-natured crater, but uncommon wakeminded." The inadequacy of some of the more scientific standards Dr. Holmes illustrates by citing the instance of twenty-five adult, well-trained, experienced teachers, not one of whom could pass all the Binet-Simon tests and some of whom "failed ignominiously in a majority of them." Finally, the reader is reminded of the value of constructive action, of directing and managing situations in unsupervised play, as a test of ability.

The "case method" is the plan of the book, and this adds greatly to its value. Varieties of backward children, typical retardation due to physical defects, minds in strait-jackets, bad and backward children, retardation due to environment, and the backward child in the home, are discussed by means of illustrations drawn from the author's personal experience. To inoculate teachers and parents with intelligence, to get them to see beyond indolence and "badness," to look for causes, has long been a serious problem. Yet both teachers and parents are continually asking how to deal with a particularly troublesome child. The difficulty is that they are seeking rules and that is just what neither psychology nor pedagogy can give. The method can be indicated, however, and this is done by the book before us. It puts the reader into the "problem attitude." And this leads

him to look for causes, to diagnose a case, and to cure it rather than to give a superficial opinion and treatment.

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René Descartes Meditationem über die Grundlagen der Philosophie mit der sämtlichen Einwänden und Erwidernugen. ARTUR BUCHENAU. Leipzig: Verlag von Felix Meiner. 1915. Pp. xiv + 493.

For the benefit of those students who prefer to read Descartes in German, the excellent Philosophische Bibliothek has issued a translation of the "Meditations" and of the criticisms and replies, the latter now rendered in German for the first time. The translator and editor closes his preface by calling attention to the great interest felt in Germany for the philosophy of Descartes and by trusting that in spite of present political oppositions this profoundest, perhaps, creation of the romance intellect may receive the esteem that it deserves. The translation is a new one and should be of great value in the field for which it is intended.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. July, 1916. *Philosophy in France in 1915* (pp. 523–545): A. LALANDE.—Notes the influence of the war on philosophical publications, points out the abundance of writings on the subject of *droit* and their relation to the present situation of conflict, and closes with a notice of the death of François Pillon and a brief account of his religious philosophy. *Continua and Discontinua* (pp. 546–566): C. LLOYD MORGAN.—Taking the field of perception as the domain of inquiry, and distinguishing reality from appearance on the basis of delicacy of perception, contends that discrete parts are not *discovered* as preexisting in a continuous whole, but are *made* for purposes of interpretation. "I submit that perception is unable to discover parts until manipulation or thought imposes cuts actual or ideal." *The Anti-Intellectualism of Kierkegaard* (pp. 567–586): DAVID F. SWENSON.—"The aim of the present paper is twofold: to give an introductory characterization of Kierkegaard's individuality as a thinker, and to elucidate in some detail the epistemological position from which the paper takes its title. This position I have characterized as anti-intellectualism, in order to establish a point of contact with present-day currents of thought."

The Doctrine of the Self in St. Augustine and in Descartes (pp. 587–615): MARGUERITE WITMER KEHR.—A brief exposition of the teachings of Augustine and Descartes on the certainty of the existence of the self and on the conception of the self as free, followed in each case with an account of the likenesses and differences between the two thinkers. Concludes with the view that the teachings of Descartes were worked out in independence of the teachings of Augustine. *Reviews of Books:* Arthur James Balfour, *Theism and Humanism:* J. W. SCOTT. Douglas Clyde Macintosh, *The Problem of Knowledge:* EVANDER BRADLEY MCGILVARY. *Summaries of Articles. Notes.*

REVUE DE METAPHYSIQUE ET DE MORALE. July, 1916. *Contingence et Catégorie* (pp. 543–605): L. DAURIAC.—Instead of preparing to dispense with categories because they fail to attain universality, we must retain them and keep them working more than ever. *Une crise mystique chez Descartes en 1619* (pp. 607–611): G. MILHAUD.—An attempt to determine the significance and importance of a short lost treatise known as the Olympica, mentioned in the inventory of Stockholm, from citations of Leibniz and the work of Baillet. *La logique des classes et la théorie des ensembles* (pp. 623–631): H. DUFUMIER.—The concepts of logic appear naturally at the end of the effort of mathematics toward an increasingly general exposition of its fundamental ideas. *Questions Pratiques. Nécrologie.*

Guyer, Michael F. Animal Micrology. Chicago: University of Chicago Press. 1917. Pp. xi + 289. $2.00.

Henderson, Lawrence J. The Order of Nature. Cambridge: Harvard University Press. 1917. Pp. v + 234.

Huntington, Edward V. The Continuum and other Types of Serial Order with an Introduction to Cantor's Transfinite Numbers. Second edition. Cambridge: Harvard University Press. 1917. Pp. vii + 82.

Patterson, John. The Genesis. Nelson, Canada. Pp. 23.

Sellars, R. W. The Essentials of Logic. Boston, New York, and Chicago: Houghton Mifflin Company. 1917. Pp. vii + 349. $1.60.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held in London, on December 18, Dr. H. Wildon Carr, President, in the chair.

A paper was read by Professor A. N. Whitehead on "The Organization of Thought." Science, it was contended, is a thought organization of experience. The most obvious aspect of the field of actual

experience is its disorderly character. It is for each person a *continuum,* fragmentary, and with its elements not clearly differentiated. The fields of experience from which science starts are of a radically untidy and ill-adjusted character, whereas the neat, trim, tidy, exact world which is the goal of scientific thought is a world of ideas. The first great steps in the organization of thought were due exclusively to the practical source of scientific activity, without any admixture of theoretical impulse. The whole apparatus of common-sense thought arose in this way,—concepts of definite material objects, of the determinate lapse of time, of simultaneity, of recurrence, of definite relative position, *etc.* Science is rooted in the apparatus of common-sense thought. Science is essentially logical; the nexus between its concepts is a logical nexus, and the grounds for its detailed assertions are logical grounds. Four departments of logical theory may be discriminated, which by analogy may be called the arithmetic section, the algebraic section, the section of general-function theory, and the analytic section. The last, which is concerned with the investigation of the properties of special logical constructions,—that is, of classes and correlations of special sorts,—includes the whole of mathematics.

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on February 26, at Columbia University. The following papers were read: "The Effect of Method of Presentation on Immediate Memory for French Vocabulary," Miss C. E. Farnum; "Correlation of Interest and Ability," Mr. J. D. Jackson; "Psychological Analogy in Political Theory," Professor J. P. Turner; "The Influence of Mental Set upon Association," Mr. M. A. May; "Maze Experiments with White Rats," Mrs. G. H. Ruger and Professor H. A. Ruger.

PROFESSOR GEORGE O. FERGUSON, JR., of William and Mary College, has been appointed associate professor of psychology and education in Colgate University.

PROFESSOR W. H. PYLE, on leave of absence from the University of Missouri, is giving courses in educational psychology at the University of Indiana.

DR. JOHN E. RUSSELL, professor of mental and moral philosophy at Williams College, died on February 26 after a long illness.

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THE THEORY OF VALUES

THE problem of values has been in the front ranks of the battle-line so persistently during recent years that it may seem desirable to let it rest in peace for a while. It has been attacked from all sides, and some claim to have vanquished it. It still seems to have some life, however; in fact, its very hardiness invites attention. It is evidently a vital problem in current thought, and the events in Europe seem to have revived rather than extinguished its vitality.

The problem of goods, good and the Good, is an ancient one for philosophy, but it was not until comparatively recently that psychology became interested in it. Apparently it did not like the terms "good" and "goods," perhaps because of their metaphysical and theological connotations, perhaps because of their "objectivity," so it adopted and adapted terms which were better suited to its purposes, namely, "value" and "worth." Both of these terms and much of the psychological interest in them were derived from the economists, especially from those of the German psychological school. The economists in Germany who were interested in developing the relations of the so-called "subjective" elements to economical problems found the problem and theory of values and their relation to price, goods and utility a fertile field for psychological speculation; the problem soon outgrew the limitations of economics and was taken up by the psychologists proper, like Ehrenfels and Meinong. In the hands of the psychologists there soon sprang up a whole new vocabulary of values; we hear of "*Wertgefuehl*," "*Gefuehl des absolut Wertvollen*," "worth predicates." "value judgments," "worth experience."

Evidently, then, the problem of values arose quite independently of ethical theory. Ethical theory was at the time not very hospitable to the scientific methods which the psychologists were trying to introduce, nor were the psychologists very eager to become entangled in transcendentalism and its formal ethics. On both sides, therefore, there was a tendency to let each go his own way. The psychologists,

for example, not wishing to be mixed up with normative ethics, discovered the science of "axiology." After this parting of the ways, fortunately or unfortunately, the roads continued to diverge. Both ethics and psychology were apparently bound for the same place, the determination of human goods, but each claimed to know the way better than the other and so they parted. They have remained apart to the present day; the problem of values has remained for the most part an independent problem even in recent discussion. There are, however, signs to-day of a reconciliation.

Meanwhile the psychologists developed several theories of value, all more or less closely related because the same methods were employed. Ehrenfels and Meinong were the leaders in Germany, and in this country Professor Urban, whose book is the most available example of this method. The problem was attacked with the usual methods and aims of structural psychology. The first thing to do was to find a *basis* for values. It was evident that the basis was to be found in the "dispositional element," that is, in some mental element like feeling or desire. This fundamental element of values having been found, it remained to analyze the structural elements of value judgments, and the relation of these to the objects to which they referred. In short, the problem was one of analysis of structural elements of consciousness, of their combinations and relations.

Even in the more experimental methods a similar procedure was followed. Likes and dislikes, satisfactions and dissatisfactions, were taken as elements, abstracted from their natural environment, and discussed in their abstraction, but not *as* abstractions. The familiar experiments with judgments, especially "esthetic judgments," suffer from this abstraction, but more will be said of this later.

In contrast to this approach of the problem there came another with a different ring. There is something about the problem of values, and even about the term "value" itself, which makes one approach it with awe and reverence. There is something religious about it. One feels as though one were in the presence of something of the utmost importance. Of course there is imbedded in it all the enthusiasm which is evoked by such expressions as "The Supreme Good," "The Vocation of Man," and one can not help feeling a thrill, or at least a shiver, at expressions like "der Begriff des absolut Wertvollen als Grundbegriff der Moralphilosophie." But this ethical enthusiasm is heightened by the religious sense of importance which hovers about "Value." This is evidenced by the keen interest which students of the philosophy and psychology of religion have taken in the problem. Religion, some say, is primarily a conserver of values. Psychologists of religion find it a valuable aid to point out the "im-

portance," the "value" of certain religious ideas; their "value" is often used as an apology for their crudity.

It will become evident later how natural this feeling of importance is to the problem of values, but what is significant here is that this appreciative attitude toward the problem of values was separated and made distinct from, and in a sense opposed to, a "descriptive" psychology, and sought as companions idealistic epistemology, absolutistic metaphysics, and theology. The analytic psychology with its splitting and resplitting, its abstractions and distractions, soon robbed the value concept of its glamour. It is therefore quite to be expected that the more appreciative interest in the problem, having been banished from psychology, should seek a more hospitable habitat. An example of this attitude is Professor Münsterberg's "Philosophie der Werte," otherwise known as "The Eternal Values." It is the old story of the flower, the botanist, and the artist: the botanist claims that he *really knows* the flower, which the artist immediately denies, and claims for himself. Professor Münsterberg is, however, more condescending. He recognizes the necessity of both approaches to the problem. Says he: "They supplement each other completely, representing the two fundamental aspects under which the problem of values can be studied. Professor Urban's work is positivistic and the other idealistic; the one therefore deals with the relativistic aspect of our values, the other with the values as absolute realities; the one is psychological, the other epistemological; the one analyzes and explains the facts, the other aims towards a teleological system."

A glance at the first page or two of Professor Münsterberg's *The Eternal Values* gives us the setting of the book. It begins:

"Is there anything in the world valuable in itself? That is our question. Of course there are many things which we value because you or I like them, or because they are useful for a certain purpose; they are helpful to us. But such values depend upon our special standpoint. A thing may be useful to me and useless to my neighbor. It may be agreeable to our social group, but disagreeable to other nations or to other ages. Even the truths of to-day were not the truths of yesterday and may not be valued as truth to-morrow. . . . Everything seems to depend on individual standpoints, upon individual desires. Truth is nothing but that which helps us to fulfil our purposes; beauty is nothing but that which appeals agreeably to our senses; morality is nothing but useful prescriptions which secure comfort for our particular social groups; religion is nothing but suggestions which give us hope. In short, our so-called values seem to be merely means to personal gratification, changing from

age to age, from people to people, from group to group, from man to man.

"Outspoken or not, that is the philosophical creed of the overwhelming majority of thinking persons to-day. The faithful believer, to be sure, feels that his religion really brings him in contact with something which is absolutely valuable. The moral man who sacrifices his life to follow the call of duty believes in his deepest heart that the moral deed is of absolute value. The artist who creates a thing of beauty imagines that his inspiration, too, opens to him a world of absolute values. The social reformer and the statesman, the pioneer and the captain of industry, when they work and fight for the progress of mankind, feel that the human advance is something absolutely valuable. The judge when he serves on the bench is filled with the belief that it is absolutely valuable to have justice prevail among men. And in the midst of his scholarly research the seeker for truth is indeed uplifted by the conviction that the full truth is something eternally valuable. But all these convictions and beliefs, these faiths and inspirations, must fade away, it seems, as soon as the philosopher begins to examine them. He shows that they are nothing but illusions which pleasantly deceive the striving men, and that in reality no absolute values exist. Everything is relative, everything is good only for a certain purpose, for a certain time, for a certain group, for a certain individual. Goodness and beauty and progress and peace and religion and truth merely have pragmatic value. They help us to our personal ends. Our ideals and our lives are of no value in themselves. What we dream of eternal values should simply be explained psychologically like the fancies of a fairy-tale. Philosophical skepticism and relativism are thus the last word, and their answer harmonizes with a thousand disorganizing tendencies of our time" (pp. 1–2).

I have quoted at some length, because these passages seem to me to give the setting not only of this book, but of much recent discussion in general. We find the contrast, so strikingly brought out here, constantly cropping out; it seems to be fundamentally the contrast of the "states-of-consciousness" psychology *versus* metaphysical ethics. The most significant words in the above quotation are the "nothing but"s the "merely"s—"truth is *nothing but* that which helps us fulfil our purposes; values are *merely* means of personal gratification; goodness and beauty and progress and peace and religion and truth *merely* have pragmatic value." Psychology and empiricism have to bear the odium of the "merely" and the "nothing but."

Now this odium has rebounded with considerable force upon the absolutists. It is now not surprising to hear of "nothing but abso-

lute," "merely static," "merely eternal" values. This turn has been accomplished largely at the hands of the functional psychology and pragmatism, and has meant a bringing together again of ethics and psychology with relation to the problem of values. It has meant a fresh working out of the problem in terms neither of abstracted mental elements nor in terms of idealistic sentimentality, but in terms of activity as conditioned by natural and social environment. Functional psychology is antithetical, on the one hand, to the structural, states-of-consciousness psychology, and on the other to "eternal" absolutism. It demonstrates the fact that the approaches of Münsterberg and Urban are not the only two and complementary approaches. By refusing to separate the internal and external worlds by a stone wall it is forced to deal neither with "merely personal satisfactions" nor with "eternal absolutes."

The contributions of this new approach to the theory of values are significant and far-reaching. I shall attempt in the following pages to gather together a few of the suggestions and results of recent discussions which seem to mark decided advances in the theory of values, and which promise to be fruitful in the future.

Let me first suggest that we think of the adjective "valuable" as primary and not the noun "value." Values occur in nature, as the chemist might say, in the adjectival form "valuable," as attributes of objects. The noun most immediately derived from the adjective would be "a valuable," *i. e.*, we might call objects which possess the quality "valuable" "valuables." Then we might speak of the quality "valuable" abstractly and call the quality "value," just as we derive hardness from hard, and whiteness from white. The term "value" in this sense, as an abstract noun (valuableness), denotes a quality; or, as Aristotle would say, it is not an οὐσία, but a ποιότης. But current usage has also identified the term "values" with "valuables," so that one can often hardly tell which of the two meanings is employed, and considerable confusion has resulted. It is rather difficult to see how one could speak of values in the plural in the sense of "valuableness" unless one were speaking of different kinds of value quality. On the whole, I think, the term "value," when used concretely (a value, values, *etc.*), is used in the sense of "something valuable," "a valuable object." I shall attempt to keep this distinction, and where I do not substitute the terms "valuables" or "valuableness" the context will, I hope, make clear whether the term is used concretely or abstractly.

The next question is: How do objects become valuable? or to put it in a less misleading form: How do valuables come to be? We might expect to find the simplest occurrences of values in the simplest forms of nature, in inorganic nature. We might, for example,

speak of the sun as valuable for warming a stone, *i. e.*, from the standpoint of warm-stone the sun is valuable in so far as it can warm the stone. Similarly we might speak of any cause as valuable for producing the effect which it can produce under certain circumstances. But here we are speaking of value in the very broad sense of potentiality. Anything is valuable with respect to its possibilities under changed circumstances. We can at least say that without change value would be impossible; but I think if we examine the situation more closely, we will find another element. An object must be valuable not only *for* something, but *to* something, or better said, in order that an object become valuable for something it must be valuable to something. To return to our illustration, unless there is a situation in which the stone exists as to-be-warmed there can be no value of the sun as a stone-warming object. If value is to be predicated of the sun as a stone-warming object, it must be valuable to some such situation. Now we can search inorganic, lifeless nature high and low and not find such a situation. The stone simply is; it is not *for* anything. It is not to-be-warmed any more than it is to-be-broken. Inorganic nature seems to be indifferent to values. It is only when we put the stone and sun in relation to some activity in which the stone functions as something-to-be-warmed that the sun becomes a possessor of value.

When we turn to organic nature, to organisms, we find such activity. We find objects grouping themselves with reference to the plant or the animal as valuable or not valuable for carrying on certain activities. Carbon dioxide becomes valuable *to* the plant *for* making food. The plant by virtue of its being an organism which carries on selective activity has created a situation to which valuables are relevant, and just as natural as they are relevant.

The same sort of situation confronts us when we turn to human nature-values. We have here selective activity of the most complex type. We have active interests, tendencies, desires, conations, adaptations, call them what you will, directed toward definite ends. Things are known, acquire meaning, as furthering or thwarting these interests; goods and bads, valuables and not-valuables are the result. Functional psychology and pragmatist logic have made us so familiar with this conception that it is useless to dwell on it here.

The value situation, then, consists of (1) a valuable object, (2) an organism or activity to which it is valuable (or by which it is valued), (3) an end or purpose for which, with a reference to which it is valuable.

All three of these factors seem to me to be essential to the value situation; and yet even a summary review of the leading theories of value reveals the fact that it has been customary to neglect one or

more of these factors in dealing with the value situation, and the methods and results have been warped accordingly. The subjective idealists and introspective psychologists found values to be products of human consciousness, determined by human desire and feeling. The other factors of the situation were straightway forgotten and discussion centered upon the mental content of the value-judgment. Valuation *per se* was studied; the object valued, the specific end for which it was valued were deemed irrelevant or even non-existent. Immediately the cry of "relativism and subjectivism!" was raised by the absolute idealists and the realists. We must have independent values. This led to an over-emphasis of the valuable objects as independent of human wants and interests. And thus the dispute over the objectivity *versus* the subjectivity of values was carried on, a duplicate of the dispute over qualities. Of course human values are relative to human activity and desire, but that is no ground for despising them as *merely* subjective. Would irrelative, or, to put it a little stronger, irrelevant values be any better? Of course values are objective, both in that they are *of objects* and in that they are controlling and guiding factors of human experience; but why should value, therefore, be an eternal quality of certain objects independently of the relations of these objects to practical situations? There is no need of dealing with values in terms of subject and object. If only values were taken as they occur naturally, specifically, and practically, much useless discussion might be avoided.

On the side of experimental psychology there has been a similar failure to take in the whole situation. For the purposes of experimentation certain factors of the value situation have been selected and others rejected as irrelevant, and so the results of the experiments have been misleading, or at least unilluminating. Most of the experiments on judgments of evaluation have had to do with so-called esthetic values, judgments of likes and dislikes, agreeableness and disagreeableness. The subject is required to arrange in order of merit a number of colors, figures, sounds, anything. The question to be asked is: Is it pleasing or displeasing? Which is more satisfactory? Which do you like better? *etc.* But supposing the subject should ask: "Better for what?" "Which is more pleasing, scarlet or drab?" "Pleasing for what? for a house, for a dress, for a sunset or for a bedroom?" "No matter," the experimenter would say, "not pleasing for anything in particular, just pleasing in general." But are things pleasing or displeasing, satisfactory or unsatisfactory, likable or not, *just in general?* Are not these judgments in practise relevant to a particular situation? Genuine evaluations are never made "in general"; the values always refer to

something specific, they are valuable *for* something. And so to ask: Which of these is more valuable? without saying *valuable for what,* is embarrassing to say the least. It robs the valuation of all its genuineness. It may be possible to tabulate the results of these experiments and get certain correlations and agreements, but do they indicate anything significant about values? This abstraction of valuation is characteristic of practically all of the experimental study of judgments of evaluation and renders them of little significance for the study of values and valuation as they really occur. The same method has been applied to determining the relative value of different types of values, but more will be said of this later.

The present need is that psychology study values at home, in their natural and specific situations. They can not be rightly studied as abstractions; they must be studied in their functional relationships, and this involves a study of all three factors of the value situation in their proper and specific relations.

With this conception, then, value appears essentially as that quality of an object by virtue of which it becomes a means to an end. Now means and end are relative terms. The same thing may be viewed now as means, now as end; when viewed as means it is valuable in so far forth. This relation of means to end implies selective activity. In inorganic nature and the lower forms of life we see ends, if we may call them so, or potentialities realized directly and without mediation. Means and end are fused into potentiality, and from the point of view of actuality, to use Aristotelian terminology, this potentiality may be called valuable in a very broad sense, as we saw before. But in the higher forms of life and especially in man, ends and means become constantly more and more distinguished. The more purposive activity becomes the more mediate it becomes. Means are not only increased in number, but are made more refined and subtle. Herein, we might say, lies the whole history and progress of mankind. This whole process of increased consistency and refined purposiveness of activity means a multiplying and manifolding of value situations. For the complexity of human values is produced not so much by the multiplication of ends as by the multiplication of means for attaining ends, or, more accurately, by the transformation of ends into means. Primitive nature reveals a multitude of potentialities actualized, but there is little coordination of these processes, there is no way in which the actualization of potentialities can be made cumulative. But in human activity we have a very advanced type of cumulative activity; one end is made to serve another; values are organized and made to serve a common purpose. In other words, in the passage from primitive nature to

human nature, the "valuable *to*" and the "valuable *for*" elements in the value situation become increasingly separate and distinct.

The question arises here: Are not ends as ends valuable? Must we not predicate value of those things after which we strive just because we strive after them? Are not human ends goods in themselves? It has been frequently maintained and is still widely held that that is just what constitutes values and goods, that they are good-in-themselves, valuable *per se*. That is, for instance, Münsterberg's contention, as we saw. "Is there anything in the world valuable in itself?" And accordingly his list of eternal values includes things, persons, valuations, nature, history, *etc.* To some minds this would seem far too pluralistic; they would find *The Eternal Value.* At any rate, the search for the highest good has been a favorite sport among philosophers ever since the days of Aristotle.

Aristotle, it seems, knew what he was talking about. He tells us a good is that at which a thing aims: health is the good of medicine, a ship the good of the ship-building art; well-being, welfare, is accordingly the good of man, as social being, and since this includes all that aims at a good in the most general sense he calls it *the* Good, the thing aimed at *par excellence.* Now that is all very clean-cut and intelligible. But when Aquinas and Kant and Mill and the others began talking about good and *the* Good, it meant an entirely different thing, and when they tried the same trick, apparently, that Aristotle did, it didn't work very well. The trouble was that they were speaking of a different kind of good. For instance, the utilitarian good, to which we may confine ourselves for the present purpose, is not "that at which a thing aims," but "that which is useful." Goods in this sense, that which is useful, we have called values, valuables.

Now it is of this kind of goods that men have asked: What is the supreme Good? or as they say now, the highest Value? Let us see what the implications of this conception are. We might speak of the highest value empirically, *i. e.,* it might be possible theoretically to compare all valuables and to arrange them in order of merit according to their comparative value in all kinds of situations, the number of situations in which they are valuable, *etc.* The one which came out at the top of the list might be called the highest value. But no one ever tried to arrive at a highest value of this sort, for not only would it be practically impossible, but there would be no motive for finding it. For it would in no sense be absolute or eternal, since with changing situations it might be superseded; nor would it be valuable *par excellence* in every situation, since in any specific situa-

tion another object might be more valuable. No, the highest value is not highest in this sense; it is highest in that it is absolutely, eternally, independently valuable. For our conception of values this implies that the highest value would have to be of the greatest value for anything to anybody in any situation. What sort of a thing might answer to this description might be interesting for speculation, but what concerns us here is that if there should be such a supreme value its claim must rest upon an empirical basis, and this is *prima facie* impossible; for who would attempt to analyze all or even approximately all possible situations in which values arise, in the hope of finding some value universally greater than any other? The same is true of any number of such eternal values. Of course love, happiness, loyalty, reason, anything may be hypostatized as values, but that is not very good psychology. These may be significant as motives, interests, or ends, but they are not for that reason eternal values, nor values at all. It is difficult for me to imagine just what is meant when ends as ends are spoken of as values. They don't seem to come under the value category. It is conceivable that human ends might be viewed as useful, as means, by some other kind of experience like that of a bird or of the absolute, for instance; but within the realm of human experience it is only as our ends are viewed as capable of leading to something else, some further human end, that value can be predicated of them. Thus we might grant that well-being is the chief good, that at which all things aim, but *as such* it need not be *the* or even *a* value. It may be invaluable, but not valuable.

The great objection which lies at the heart of all opponents to relative values is that relativity furnishes no criterion of judgment between true and false valuations. If values are relative to human desire, any desired object is a value, apparent values are called true; black is made white, evil is called good, and "all's well with the world." Hence the "merely" which is attached to the term "relative" signifies not only philosophic scorn, but moral indignation. In order to vindicate, if possible, the character of the relativist let us see whether and how he distinguishes true from apparent values. The relativist would reply to the absolutist by asking: How else could the truth of a valuation be established except by relating it to a specific situation and judging its adequacy to fulfil its function in it? In other words, value can be apparent or genuine only with relation to experience and in experience, and it is precisely because the relativist is interested in putting values to work and thus testing them, that he makes human values relative to and relevant to human experience. Relativism does not imply identification of the desired and the desirable. If an object desired as a value turns out upon reflection or experience to fail to measure up to the situation, it is

recognized as valued falsely. Strictly speaking values, like facts, are neither true nor false, they simply *are;* it is valuation which is true or false. The details of the verification of valuations need not be discussed here, as they have been emphasized by pragmatism in connection with the general theory of truth and thought. It need merely be pointed out that the critique of valuation is ultimately the business of intelligence applied concretely. Only with the growth of intelligence and intelligent discrimination can valuation become more accurate and efficient. There is no ready-made, universal, *a priori* touchstone which can be applied for judging values; there is no short-cut to truth. Genuineness of valuation must be discovered by constant mental labor.

The establishing and relating of *types of values* has always been one of the most vital aspects of the problem of values. The traditional types are economic, ethical, esthetic, religious, logical, biological, and perhaps one or two more. It is not easy to make out the psychology of this differentiation of values. There seems to be a trace of the old faculty psychology in it; one might say religious values are the object of the religious faculty, esthetic values of the esthetic faculty, *etc.* It is quite easy to see how economic values came to be regarded as a distinct type, for the economists were among the first to become interested in the problem of values. The value of the economists came to be expressed in terms of exchange, and was thus differentiated from the others. As to the other types, they seem to have originated by each of the branches of philosophic study, ethics, esthetics, *etc.,* claiming a value all its own. In whatever way these types may have come about, it is quite evident that not much psychology is at the bottom of the classification.

Attempts have been made by experimental and other methods to make a scale of human values. The experimental method usually consists in asking a large number of persons which they would rather be: a thief, a dunce, a pauper, an infidel, a recluse, a dullard, or a corpse. The answers are tabulated and an "empirical scale of values" results. This is the same method as the pleasant-unpleasant order of merit method mentioned above, and deserves the same criticism. The values are abstracted from their natural setting and then arranged as a scale in their abstraction. A scientific, psychological classification of values has not been worked out and can not be attempted here. But disregarding for the present the traditional types, we may gather some light on the problem from our analysis of the value situation.

Now it will be evident that we could classify values from the three different standpoints. First of all we might distinguish different kinds of valuables, *i. e.,* the kind of objects which may have the value quality. From this standpoint we might reach some such

classification as the following: (1) Physical Objects, *e. g.*, tools, food, clothes, pianos, rosaries. (2) Concepts or Mental Processes, *e. g.*, the recalling of a name, the hearing of a symphony, the thought of home, the hope of heaven. (3) Activities, such as earning money, singing a song, taking a walk. The second might be classed under the third. (4) Social Institutions, *e. g.*, a family, a government, a convention. We might keep on, but a shorter way of saying all this would be to say that any kind of thing whatsoever could conceivably be valuable in some situation or other.

Secondly we might classify values according to the things *to* which they are referred. From this standpoint we could distinguish between (1) Plant values, objects valuable to plants: (2) Animal values. Under and above animal values we would put (3) Human values: and of these we might distinguish between (a) Individual values, objects viewed as valuable to an individual, (b) Social or institutional values, those valuable to a society or institution as such. At this point some would no doubt add Absolute values, objects valuable to an absolute experience, *etc.* But we shall be more modest, and confine ourselves to the types of terrestrial values.

Then there is a third standpoint from which values might be classified, namely, that of the purpose or end *for* which a thing is valuable. But here we come upon a diversity which practically defies classification. The ends for which things are valuable are specific ends. It is meaningless to attempt to classify the ends of activity on any other than a specific basis; ends simply do not exist *ueberhaupt.* To speak of the ends of activities in a general way, *ueberhaupt,* with reference to values, is meaningless, and yet this is usually at the basis of the traditional classifications. To attempt a classification of the ends of actions specifically is, if not wholly impracticable, at least beyond the scope of this paper.

There is still another standpoint which may be adopted for distinguishing types of value, and this is, I think, the standpoint adopted by the traditional classification; at least it represents what the traditional classification aims to do, or is thought to aim to do. We may attempt to classify values in the abstract, not concrete values; *i. e.*, instead of classifying valuables, classifying types of value quality. Economic value and religious value are supposed to designate different *kinds of value quality.* What has been described as the value situation, they tell us, represents but one kind of value, "merely" utilitarian value. There is, they say, for example, also value *per se,* things valuable in themselves. This is a different kind of value quality. Its objects are valuable not because they are useful, but because they simply are valuable. Thus, they say, it is possible to distinguish types of value quality, like the colors of the spectrum. My objection to this is that there is a tendency and a danger to rob

the term "value" of its definitive meaning; the meaning of "value" is stretched unduly and made to embrace meanings which are not native to it. The original distinctions are not kept in mind and the term becomes meaningless.

Enough has been said in the way of tentative classification of values to bring out one point, and that is the most significant for our present purposes, namely, that the one way to distinguish types of values is to distinguish functions in specific value situations. Anything may be any kind of a value, depending on its function in a specific situation. Types of values can not be distinguished absolutely and independently of circumstances, nor can anything be assigned to one type of value universally. Values are by nature particular and can not be classified abstractly without reference to specific situations.

The same criticism would apply to the more general classification of values as higher and lower. Religious, ethical, and esthetic values are usually called higher values, and the biological, *e. g.*, lower. But this absolute denomination of values as higher and lower is as impossible and as impractical as any absolute scale of values. The only possible intelligible meaning of highest or lowest value is the object which is most or least valuable, respectively, *in a given situation.* And so if we wish to speak of highest or higher values, we must qualify by saying, given a certain situation, experience and reflection show that *X* is of the highest value, or of higher value than *Y*.

We can not leave the subject without indicating the problem of values as standards and controlling agencies of human conduct. That values control our conduct is not a moral ideal, but an empirical fact. But it is quite as evident that the valuations which govern our conduct are for the most part made *for* us, not *by* us, *i. e.*, they are factors in our social environment, rather than products of our individual intellectual discrimination. Now since social valuations are usually the products of chance and circumstance, and not of intelligent discrimination, it follows that social valuations are not necessarily the best attainable. The moral problem of values is, then, to develop accuracy of valuation, to organize values for greater effectiveness, to put values to work with a view to discovering and utilizing the knowledge thus gained. Social arrangements and organizations must seek to profit by the values which intelligence discovers; values must be constantly adapted to the fulfilment of human needs and purposes. This, we saw, is the business of intelligence constantly and concretely applied. And this takes us back to the educational problem, that of developing in the individual skill and accuracy of intellectual discrimination. Education must not merely impress and impose on the individual ready-made social valuations as standards; it must seek to develop in him the technique of true valuation. Society must not

be content to conserve its existing law and order by means of education; it must seek to make the fruits of education the means for its progress.

We have seen how the psychology of values emerged as an attempt to develop a scientific theory of human goods over against the absolutistic ethical theory. We have sketched its progress and noted its social significance. It has served the cause of progress; it has emphasized the need for revaluation and reorganization of social activities. We have also seen how, on the other hand, the psychology of values has been pressed into service to bolster up the very thing to which it constituted a reaction. Certain values have been apotheosized and given absolute significance; they are viewed as things to be conserved. The plea here is that the psychology of values should not turn traitor to its own cause by becoming a conservative and conservator. A scientific psychology must realize that when it is dealing with values it is dealing with progressive forces. Values are instruments of progress, and without change in the direction of progress they lose their function and meaning. A value is not an absolute unchanging piece of reality, but a characteritsic of nature by means of which organic activity is made possible and carried to its perfection.

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BEHAVIORISM AND GENETIC PSYCHOLOGY

I HAVE been asked to review the new edition of Hobhouse's *Mind in Evolution*.[1] I shall attempt to do so by describing my reaction to the psychological situation in which Thorndike,[2] Hobhouse,[3] and Watson[4] are centers of widely influential initiative.

When, in 1901, Hobhouse's book was published, I was a behaviorist of the Watsonian variety, for I considered introspection a futile method and attention to the subjective unfavorable to the progress of natural science. In the development of the science of behavior (since called by Watson behaviorism) along narrowly biological lines, I foresaw the progress of psychology. I must have felt quite as con-

[1] L. T. Hobhouse. *Mind in Evolution*, London, Macmillan and Company, 1915. Pp. xix + 469. Second edition, revised and enlarged. The first edition of the work appeared in 1901.

[2] E. L. Thorndike. *Animal Intelligence*, New York, The Macmillan Company, 1911. This book contains the author's chief contributions to comparative psychology.

[3] *Development and Purpose* as well as *Mind in Evolution*.

[4] J. B. Watson. *Behavior: An Introduction to Comparative Psychology*. New York, Henry Holt and Company, 1914.

fident of the value of my position as does Watson to-day, for when *Mind in Evolution* fell into my hands, I dismissed it with scant courtesy and meager attention. With a strange mingling of amusement and shame, I now confess that on the first page of the preface of my copy appear the marginal criticisms "theorist" and "bum." It was nearly fifteen years before I finished reading the volume! Could any objectivist have reacted more "behavioristically"?

How different my reaction to the revised edition! I read it at once with extreme interest, discussed its materials with a group of advanced students, and when the invitation to review it came, I welcomed the opportunity.

Nevertheless, I must insist that I am still a behaviorist, for I believe in the importance of the scientific study of behavior and am more deeply interested in it than in any other scientific activity. Is it not true that, as in the case of our philosophies, there are behaviorisms and behaviorists? Watson has set before us his particular opinions concerning the study of behavior in its relations to physiology and psychology. His point of view is not new, neither is it lacking in value; but I submit that his *Psychology as the Behaviorist Views It*[5] should have been entitled *Psychology as a Behaviorist Views It.*

To put it briefly, Watson is interested in organic behavior and its evolution. He regards the presuppositions and the methods of physical science as adequate for the solution of the problems of psychology. He dogmatically asserts this adequacy and refuses to admit the possible value of other presuppositions, methods, points of view. In my opinion, his is an "illiberal attachment"[6] to an assemblage of ideas which is in itself valuable, but which certainly does not monopolize the profitable possibilities of psychology or physiology.

As contrasted with Watson, Thorndike and Hobhouse strive to command the methods and materials of physiology, as well as those of psychology as commonly defined, in the interests of genetic psychology. They are not willing to accept Watson's pronouncement; instead, while recognizing the extreme value of the methods which he upholds, they insist on freedom to employ any or all other methods which promise to advance our knowledge of the genesis of mind.

Yet another significant point must be made. Whereas Watson insists that the psychologist should work with physical tools and those alone on sensible modes of energy, Hobhouse believes, and in this he is not alone, in psychic energy, and contends that the solution of the

[5] *Psychological Review*, 1913, Vol. 20, p. 158.

[6] I use the expression with grateful acknowledgment to Mr. Samuel McChord Crothers.

chief problems of psychology demands its detection and the devising of means of measuring it.[7]

Watson's behaviorism is simply and solely the physiology of organic activity. I, for one, am not willing to admit that this constitutes all that there is or may be of a scientifically profitable genetic psychology. Thorndike, like Hobhouse, has retained an open-mindedness or liberality of view which contrasts most strikingly with that of Watson. Each seeks through the study of all observable phenomena new light on the problems of the development and evolution of mental life.

Mind in Evolution is a discussion of certain fundamental problems of genetic psychology and of materials which contribute to their solution. Thus its author bridges the gap between the first edition and the revision of his important work:

"In the years that have elapsed since the first edition was published, the subject of comparative psychology has undergone a great change. It is hardly too much to say that, owing to the activity of a group of workers in the American universities, the investigation of the animal mind has, roughly within this period, established for itself a place among the recognized sciences. Hence much that was within the hands of pioneers when this book was first written, has now been thoroughly examined. Much, of course, still remains undetermined. In some material respects I have found it necessary to modify opinions formed on the data available in 1900. In particular, the observations of Mr. H. S. Jennings have shown me that something of the nature of mind is to be carried further down in the organic world than I supposed. His results, together with other work in general psychology, have led me, however, to extend rather than to narrow the view taken in the first edition of the function of mind in evolution, and even to raise the question whether mind (in the infinitely varied forms of its activity from the groping of unconscious effort to the full clearness of conscious purpose) may not be the essential driving force in all evolutionary change. In any case, the revolution which has overtaken biological theory during the same period is profound. Its significance is as yet imperfectly grasped, but it will, I believe, be found, as time goes on, to have invested the constitution of the living being as against the environing conditions with a new importance, and in this constitution the fundamental fact everywhere is that the living being is not passive, but active, not mechanical in its reaction to things, but assertive, plastic, and, in a measure proportioned to its development, self-determining. If this is so, psychology will in the future have a larger part to play than has hitherto been supposed in the study of the rise and decay of forms of life."

[7] *Mind in Evolution*, p. 398.

In this new edition several chapters have been substantially altered, chiefly as the above quotation indicates, because of newly discovered facts, and in addition, two new chapters have been introduced—the one on "Mind and Mechanism," the other on "Conation." There is also a new appendix, which deals with the Elberfeld horses.

The title *Mind in Evolution* has a double meaning. It refers at once to the process of mental evolution and to the function of mind in organic evolution. Hobhouse is interested in both, but a careful reading of his book indicates that the general problem of the rôle or function of mind interests him more deeply than do questions of fact in psychogenesis. *Mind in Evolution,* however, is devoted, primarily, to a consideration of the course of the evolution of mind. It outlines mental evolution in the animal kingdom, and by appeal to the facts of human and infrahuman psychology develops the outline into a system of genetic psychology. For some reason the author has depended almost wholly upon the facts of animal psychology for his construction, neglecting in a surprising way the materials of ontogenetic psychology, of psychopathology, and of social psychology. This task of tracing the course of mental evolution and of discovering the function of mind in evolution is indeed a strange one for a philosopher, publicist, and essayist, but our author has performed, or rather is performing, it with amazing insight and skill, albeit with inadequate knowledge of experimental methods and the literature of the various branches contributory to genetic psychology.

Since the original edition of *Mind in Evolution* appeared so long ago, a brief sketch of the book may not be superfluous.

The author points out that two types of correlation appear in organic behavior: the mechanical and the mental. The former is not influenced by the results of an act; the latter is so influenced. The mental factor—efficient in behavior—is called by Hobhouse conation. It is describable as an "uneasiness" which "tends to pass into some other mental state." Conation, and hence consciousness, in all probability is coextensive with life (p. 397), but its correlating function tends to increase in importance throughout "orthogenic evolution."

The organism is defined as "a structure which maintains, reproduces, and develops itself by coordinated conations, the basis of the conations and their coordination being laid by the inherited arrangement of the structure" (p. 37).

Some internally initiated organic activities and certain externally initiated reflexes are uninfluenced by their own results, but all instinctive and intelligent activities are to greater or less extent influenced by conational consciousness. Intelligence, as contrasted with instinct, involves more or less complete and explicit awareness of the end or purpose of an act. Behavioristically expressed, it is "the

power of an organism to adapt action to requirement on the basis of its own experience" (p. 108).

The principal stages in the correlation of behavior are thus designated and briefly described by Hobhouse.

I. *Correlation by Heredity.*—This is racial and slow. Although not intelligent, it is "an indirect correlation of experience, reaction, and welfare" (p. 396).

II. *Correlation by Coexistent Conditions.*—This involves a new factor, conation, traces of which are found in very low forms of animal life. It serves to render more plastic and efficient hereditary correlations (p. 399).[8]

III. *Correlation Based on Individual Experience.*—This is intelligence. There are four great stages.

Stage 1. Inarticulate correlation. At this stage a feeling, in conjunction with random or instinctive activity, modifies subsequent reactions. For instance, after a few reactions to the situation, a spider refuses the fly which has been dipped in turpentine. Ethically considered, such a form of response is impulsive.

Stage 2. Concrete experience and the practical judgment. At this stage, the "related term" appears as consciousness. Discrimination becomes obvious. Motor ideas function. Events are in a measure anticipated. But the organism's adaptability appears to be limited to its concrete environment and to immediate practical ends (p. 403).

Ethically, impulse is replaced by desire, at this stage, and the beginnings of deliberation and self-control appear. The work of intelligence from this stage onward is the correlating "of articulate complexes in the perceptual order."

Stage 3. Conceptual thinking and will.

Stage 4. Rational system.

The above scheme of mental evolution is rather cleverly clothed by Hobhouse from the available store of behavioristic facts, but it will undoubtedly repel many readers as too highly and extravagantly speculative. Were one to attempt a justification of the plan, it would necessarily be along lines of suggestion and stimulation of experimental inquiry.

Returning, now, to a bit of history in connection with the work of Hobhouse—it was in 1899 and just in time for use by the author of *Mind in Evolution* that Thorndike published his experimental studies in animal intelligence. In order to solve certain psychological problems and to help to complete our knowledge of mental evolution, Thorndike had studied experimentally the behavior of certain birds

[8] The reader should bear in mind that Hobhouse regards conation as an effective process, dependent in all probability upon psychic energy.

and mammals. His work was that of the pioneer; his conclusions were at variance with those commonly accepted; and his results contradicted those previously recorded in naturalistic studies of animals.

Hobhouse, with keen interest in the problems which Thorndike had attacked, reacted negatively to certain of his results and to many of his conclusions. He went further and questioned the reliability of certain of the observations, while arguing also that the facts do not necessarily justify the conclusions.

Whereas, Thorndike, in the light of his experimental findings, deems ideational processes as of infrequent occurrence and of slight importance in connection with the behavior of animals other than the primates, Hobhouse finds in the observations of others and in the results of certain crucial experiments which he planned and executed for himself, abundant evidences of ideation in various other mammals as well as in the monkeys and anthropoid apes.

Naturally enough, then, Hobhouse refused to build upon the data offered in Thorndike's monograph. Instead, he formulated certain problems as of fundamental importance to his scheme of mental evolution and forthwith set out to solve them by the aid of simple experimental procedures. His subjects were dogs, cats, monkeys, an ape, an otter, and an elephant.

Thorndike's experimental technique is unquestionably open to adverse criticism, and one may doubt the representativeness or even the reliability of certain of his results. There is slight probability that he has discovered the maximum capacity of the species of animal studied. It, therefore, is not unlikely that Hobhouse is correct in certain of his critical surmises. But his experiments have not yielded satisfactory grounds for the rejection of Thorndike's chief conclusions. Hobhouse is least of all a master of the technique of animal experimentation. His conditions of observation were crude; his observations themselves few and imperfectly checked. That he was unaware of several common sources of error is apparent. For instance, he seems not to have seriously considered the possibility that his presence might supply cues to correct response, yet the pet animals, especially cats and dogs, with which he was working would persistently seek such cues.

Thorndike has put the matter rather too strongly when he says "The possibility is that animals have *no images or memories at all, no ideas to associate.* Perhaps the entire fact of association in animals is the presence of sense-impressions with which are associated, by resultant pleasure, certain impulses, and that therefore, and therefore only, a certain situation brings forth a certain act."[9] Indeed, elsewhere he has importantly qualified this surmise. For

[9] *Psych. Rev. Mon. Supp.*, 2, No. 4, p. 73.

example, he writes: "My opinion would be that animals *do* have representations and that such are the beginning of the rich life of ideas in man. For the most part, however, such are confined to specific and narrow practical lines. There was no evidence that my animals habitually *did* form associations of ideas from their experience throughout, or that such were constantly revived without the spur of immediate practical advantage."[10]

Hobhouse's position contrasts sharply with the above, for concerning his observations, he writes: "The experiments suggest that animals learn by attention to a simple sequence of events. It is easiest for them to learn if the first event is an act of their own, and the second a result of that act, which gratifies or hurts them. But even in those cases their method of learning does not ordinarily, in the instances which I have observed, conform to the notion of the gradual growth or inhibition of a habit. It conforms rather to the rise of an idea, at first perhaps dimly grasped; then clearly seen; for a while waveringly held, but soon definitely established" (p. 241).

One may not safely rely upon *Mind in Evolution* for historical perspective or even for a reasonably complete survey of the facts of genetic psychology. The author has sampled the experimental literature and marshaled groups of facts in support of his theoretical position. He makes perfectly clear to us experimentalists the urgent need for further research, and his revised edition reminds us that what has been done in the last fifteen years leaves practically unaltered the fundamental ground of difference between Thorndike and Hobhouse.

Hobhouse has imagination and insight. He formulates clearly many problems and suggests, roughly, ways of solving them. The book fires one with enthusiasm for experimental inquiry. The adverse criticisms which I have expressed may seem severe, but my appreciations are no less strong, for I believe that *Mind in Evolution* has done much and will continue to aid greatly to advance a profitable genetic psychology.

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[10] Same, p. 77.

THE CONCEPT OF THE NEUTRAL IN RECENT EPISTEMOLOGY

ABOUT the time in which the concept of neutrality was going out of favor in politics it came to the front in epistemology. Some ambiguity seems to attach, however, to the concept of neutrality in the latter as in the former realm. In the interest of clarity, not in that of any particular school of thought, I wish to set forth two meanings which certainly *may* attach to the concept, with the hope that some of those who profess themselves believers in neutral entities may be led to greater explicitness.

In one sense to call anything neutral means neutral *in a specified respect or reference;* that is, with respect to the application of a particular set of alternatives. In this sense, I do not see that "neutral" means more than that a certain conception in either of its forms is inapplicable. To say, for example, that certain things are neutral with respect to the distinction of mental and material would be to say that there are things such that intelligent discussion of them is not forwarded by applying to them, without further specification, the distinctions marked out by the terms "mental-material." What is asserted is the irrelevancy of a certain type of distinction. Thus, before discussing whether a certain term, say "experience," has subjectivistic or objectivistic implications, we might have to consider whether, taken without specific qualifications, it was not rather a neutral term, a term to be used "without prejudice." Such neutral terms, understood to be aloof with reference to certain large antitheses which have had a great rôle in the history of thought, would certainly be a great aid in clearer discussion. For there is always a tendency to assume that the question is which one of two current antitheses is to be applied, when perhaps the primary question is whether either one is applicable.

In contrast with this conceivable meaning of the term neutral, which might be called the logical, stands another which might be called the metaphysical or ontological, namely, that there is a certain sort of stuff which is, intrinsically, neutral. Consequently, it is not necessary to specify any particular *respect* or *reference* in which it is taken as neutral. Rather the attempt is made to discover and describe a particular kind of material or stuff which may be called neutral exactly as a certain stuff may be called lead or wood.

It seems to me clear that nothing is gained (while there is danger that much in clarity and pertinency may be lost) in trying to bring social facts as such under the captions of "subjective" or "objective," or under those of "physical" or "mental." They are both or neither, according to the respect in which they are taken for dis-

cussion. To assert that they are "neutral" entities would then be a way of asserting one's conviction of the irrelevancy of introducing the question whether they are mental or material. The same might be said of mathematical terms. But while one might be glad to employ the term neutral if he thought that this was its connotation, one might hesitate to use it if he thought the term meant to convey something positive about the nature and structure of social things and mathematical things, something "metaphysical" over and above what the competent sociologist or mathematician would specifically discover.

Perhaps others share in my feelings that greater explicitness as to the sense in which writers use the term would conduce to clearness. It seems to me, for example, that I noted both senses in the recent discussions of the Philosophical Association. Historically speaking, the ambiguity may be detected, I think, in James's conception of pure experience, a conception having presumably certain affiliations with the contemporary conception of the neutral. At times Mr. James identifies a pure experience with experience of a peculiar subject-matter or stuff; it is of something which *antecedes* all reflection. It is a presence of a *that* which is not a *what*. Its description is highly reminiscent of some of the things said about sensation in his *Psychology*.[1] But the term pure experience is also given a radically different meaning. Contrast with the doctrine just laid down the following: "The instant field of the present is always experience in its 'pure' state, plain unqualified actuality, a simple *that*, as yet undifferentiated into thing and thought, and only virtually classifiable as objective fact or as some one's opinion about fact."[2] According to this passage, the experience in which a distinction is made between fact and opinion is itself, as a direct occurrence, "pure" of the distinction; it is "neutral" in reference to it. In this sense, pure experience is not characterized by possessing or presenting any peculiar subject-matter. The experience of any subject-matter, whether perceptual or conceptual, simple or complicated, elementary or systematized, just *as* an experience is pure or neutral. Only later on can it be referred to or classified, and so be treated as mental or physical. The following passage is, if possible, even more explicit in the same sense: "Let the reader arrest himself in the act of reading this article now. *Now* this is a pure experience. . . . Reading simply is, is there; and whether there for some one's con-

[1] Compare *Essays in Radical Empiricism*, p. 93, and its assertion that only the new born babe has pure experience, with *Principles of Psychology*, Vol. II., p. 7, and its assertion that "pure sensations can only be realized in the earliest days of life."

[2] *Radical Empiricism*, p. 74.

sciousness, or there for physical nature, is a question not yet put."[3] And he sums up by saying that the *point* of the pure experience theory is that any experience (not simply that of the new born babe) is in itself innocent of the "inner" or "outer" quality. The "inner-outer" distinction has to do with a classification made for a specific purpose and need. If we do not have the purpose, we do not classify; the distinction is irrelevant. In present language, in itself *any* experience is neutral. Consequently neutrality is not a matter of a peculiar stuff or distinctive element. This position seems to me as sound as appeal to the hypothetical experience of the new born babe is trivial or misleading. Such "purity" as the latter possesses is something to outgrow as rapidly as the baby in fact does outgrow it. It is not something to which to appeal as philosophically enlightening, much less as a philosophical norm or standard.

I venture to add that the contemporary conception of neutral entities as in themselves a particular kind of being seems to be derivable from a combination of this notion of James (which, as he pointed out, was influenced by Mach) with one obtained by an excursion of Münsterberg into the epistemology of psychology. In his article on "Psychological Atomism" he held that distinguishable sensations are molecules as it were of which the elementary atoms are not distinguishable, but which have to be assumed to satisfy certain scientific requirements.[4] Mr. Münsterberg assumed indeed that these "inexperiencable" psychical atoms were radically different from physical atoms. But bring the pure and neutral sensation of the infant (taken from James) to bear upon these elements which determine the material and processes of our complex experience (according to Münsterberg) and you get something extraordinarily like the neutral entities out of which, according to Holt, physical and mental entities are both built up.

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REVIEWS AND ABSTRACTS OF LITERATURE

Le Système Taylor et la physiologie du travail professionel. J.-M. LAHY. Paris: Masson & Cie. 1916. Pp. vi + 196.

This volume was printed over two years since, its appearance being delayed by the war until the present, with the *reprise quasi-normale de la vie.* The Taylor system is considered not simply or chiefly as a means of increasing the factory output, but in its broader relations to the community. It is found weak on the psychophysio-

[3] *Radical Empiricism,* p. 145.

[4] *Psychological Review,* Vol. VII., pp. 1–17.

logical side, and to have taken an inadequate view of its mental, not to say moral, involvements; a criticism that comes the more aptly from the French after the events of the past thirty months. In the details of method, the measurements of efficiency in work, insufficient account is taken or credit given to methods developed, notably by Marey, before those chiefly associated with the names of Taylor and Gilbreth. A short chapter formulates the concept of professional selection, but does not pretend to elaborate it. The wage-scale policies of Taylor, Halsey, and Rowan are compared, the last being the most favorably judged, the first the least. The ideas of Taylor have their chief application to gross motor performances such as are being, and will be more and more, replaced by machinery. They do not fit the higher grade, more distinctly manual operations. (In this connection may be noted a remark attributed to a British engineer, that in two more years of war, it will be possible to build a battleship from "keel to aerial" by woman labor.) The question of fatigue has been insufficiently dealt with. A system thus calculated for over-production may make a temporary increase in the output of the worker, only to be more than compensated by hastened senescence, and increased susceptibility to disease. The author suggests two measures of the *state* of fatigue, simple reaction time and blood pressure, giving a small body of observations with each. A short discussion assigns to laboratory measurements a rôle distinctly subordinate to that of measurements in actual factory performance. But the movement analyses on which the system is based are fallacious because they eliminate necessary rest periods; measurements of total time (*chronométrage global*) are the more scientific because they take proper account of these mental factors. The system values the man for nothing but the price of his product. Its tendency is actually and deliberately to lower the standard of labor employed (pp. 177–178).

The system is then indicted not on the score of immediate commercial value, but for its social significance. Under color of immediate increase in earning capacity, the system undermines the worker's physique and morale. Great industrial organizations have other essential functions than turning out their maximum of manufactured products. The restraint that marks the volume's language, often, one feels, under much provocation, does not lessen the effectiveness of this interesting and thoughtful contribution to economic sociology.

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JOURNALS AND NEW BOOKS

THE BRITISH JOURNAL OF PSYCHOLOGY. September, 1916. *A Hierarchy without a Great Factor* (pp. 271–281): GODFREY H. THOMSON. – The object of the paper is to show that the cases brought forward by Professor Spearman in favor of the existence of general ability are by no means "crucial." "It has here been shown that a certain set of correlation coefficients, which we *know* to contain no general factor, would be claimed by Professor Spearman as giving further support to the existence of such a factor. *There is therefore nothing to show whether the many cases brought forward by him really* contain a general factor or not." Work on correlation and hierarchies has shown: (1) Since correlation does actually exist between tests, there must be either group factors or a general factor present, or both. (2) If there is no general factor, then it is probable that the group factors *overlap* in a complicated fashion, for otherwise there would be no hierarchy. But even this is by no means certain, for as a rule very few columns reach the correlation standard which Professor Spearman has laid down, and these few may be among the minority which do not correlate highly even on Thorndike's theory of non-overlapping group factors. (3) There is not the slightest mathematical evidence so far forthcoming which will enable us to distinguish between *overlapping* group factors and a general factor. *Some Comments on Mr. Thomson's Paper* (pp. 282–285): C. SPEARMAN. – "For all that can be seen," the "special arrangement" used by Mr. Thomson "might involve psychological absurdities. It might even reintroduce the general factor by a back door. And in point of fact, as my next paper will show, it does both." *The Relations between Magic and Animism* (pp. 285–316): CARETH READ. – Wundt's and Frazer's theories are mentioned. The following topics are discussed: (1) Ideas and Practises of Magic adopted by Animism; (2) Retrogradation; (3) Spirits inspire magicians; (4) Spirits operate by magic; (5) Spirits are controlled by magic. *The Prevalence of Spatial Contrast in Visual Perception* (pp. 317–326): W. G. SMITH. – The object of the paper is to present observations regarding the modifications in spatial perception which are introduced when a line in the visual field, whose length is being estimated, is accompanied by another line parallel to it and of varying length. The subjects were 20 men and 20 women, members of the class of psychology in the University of Edinburgh during the summer of 1913. The writer concludes: "There is little or no evidence in the general results of this investigation dealing with parallel lines that contrast is distinctly and generally operative in modifying the apparent length of a line. On the other hand, there are certain facts which may be regarded as suggesting that it is present together with other conditions,

such as confluence, which in certain situations neutralize its influence, but in others permit it to appear. When the subjects are divided into groups of men and women it is that the results of the former group are more readily interpreted in accordance with contrast, and those of the latter in accordance with confluence. It is found that, while the average length of the reproduced is less than that of the presented line with both men and women, the tendency towards decrease is markedly greater in the group of men." *A Contribution to the Study of Fatigue* (pp. 327–350): MAY SMITH.–The problem may be expressed in the following questions: (1) Is it possible to measure fatigue objectively? (2) What are the immediate effects of fatigue? Do they differ in any measurable degree from the remoter effects? (3) How long does it take to return to a normal condition as estimated by an objective standard after undoubted fatigue, and what is the nature of the recovery curve? (4) What is the effect of fatigue on an already fatigued state? (5) What is the relation between fatigue as experienced by the fatigued person and fatigue as estimated by some objective standard? The tests used were the Dotting Machine Experiment and Mr. McDougall's modified form of it; the windmill, an illusion of reversible perspective; the learning and relearning of nonsense syllables; tapping test for speed. The writer concludes from the evidence afforded by these experiments that (1) Fatigue as estimated objectively involves two distinct phases; a phase when fatigue acts apparently as a stimulant, so that work demanding concentrated attention is done more effectively than under normal conditions and a phase of longer duration when the body is attempting to make good its losses, which phase is characterized by a general loss of accuracy of aiming, in a weaking of the powers of inhibition, as shown by the increase in the number of uncontrolled dots, in marked loss of the power of concentration, as shown by the inability to attend to the words of a list, and in loss of retentiveness, as instanced by the inability to reproduce the words when the connections have been realized, and in the increased number of repetitions required to relearn a group of nonsense syllables. (2) The subjective feelings bear no relation to the objective demonstration of fatigue, extremely bad work being not infrequently accompanied by a conviction that it is unusually good. (3) There is the suggestion that it is possible to become partially immune to a particular form of fatigue. (4) The time taken to return to a normal condition after the loss of but a few hours' sleep is disproportionately great; and this return is gradual, but irregular. (5) Fatigue acts on a fatigued state as it does on the normal, *i. e.,* while the strain is present there is improvement, but the return to a reliable normal is considerably delayed. *The Influence of the Form of a Question* (pp. 351–389): BERNARD MUSCIO.–The specific aim was to

compare certain question forms in regard to their respective influence upon answers, it being assumed, as a result of previous experiments in the psychology of evidence, that the answer to a question is under certain conditions partly determined by the question's form. The conclusions are: (1) Changing the indefinite *a* into the definite *the* article in a question form decreases suggestiveness, decreases caution, decreases reliability. (2) Introducing a negative into a question form increases suggestiveness, decreases caution, decreases reliability. (3) Changing a subjective-direction into an objective-direction question form decreases suggestiveness, decreases caution, decreases reliability. (4) Including both the definite article and a negative in the one question form, increases the caution and increases the reliability of the resulting form compared either with the form containing the indefinite article and a negative or with that containing the definite article and no negative. (5) Including both the objective-direction and a negative in the question form decreases the suggestiveness, decreases the caution, and increases the reliability of the resulting form compared with that containing the subjective-direction and a negative. (6) The implicative question form is lower than all the other question forms investigated for suggestiveness, caution, and reliability. (7) The incomplete disjunction question form possesses a relatively high suggestiveness, a relatively low caution, and a relatively low reliability. The general conclusion is that the most reliable form question is the subjective-direction question form which contains neither a negative nor the definite article. *Publications Recently Received.*

Adler, Alfred. Study of Organ Inferiority and its Psychical Compensation: A Contribution to Clinical Medicine. Tr. by Smith Ely Jelliffe. Nervous and Mental Disease Monograph Series, No. 24. New York: Nervous and Mental Disease Publishing Company. 1917. Pp. x + 86.

Keith, A. Berriedale, and Carnoy, Albert J. The Mythology of All Races: Indian and Iranian. Volume VI. Boston: Marshall Jones Company. 1917. Pp. ix + 404.

Stecher, Lorle Ida. The Effect of Humidity on Nervousness and on General Efficiency. Archives of Psychology, No. 38. Edited by R. S. Woodworth. New York: The Science Press. 1916. Pp. v + 94.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held in London on January 8, Dr. H. Wildon Carr, president, in the chair.

A paper was read by Mr. C. D. Broad on "Hume's Theory of the Credibility of Miracles." Hume's general argument against mirracles is, he maintained, weak. On Hume's definition two miracles of the same kind (*e. g.,* two raisings from the dead) could not occur. Yet believers in miracles hold this to be possible. If one reported exception to an alleged law ought to make *no* difference to the strength of our belief in it, why should two or more? But if one reported exception makes *some* difference in the strength of our belief in the law, how can we be sure *a priori* that it may not in certain cases reduce our belief to doubt or disbelief? If people had acted on Hume's theory, many scientific discoveries would not have been made. For exceptions to many alleged general laws ought, if Hume be right, to have been treated, except by their discoverers, as alleged miracles, and disbelieved. Since those who observe the exceptions are experimentalists, and those who explain them are often mathematicians, such exceptions would never have been explained if the mathematicians had taken up Hume's attitude. Actually the belief of most people in most laws of nature depends on testimony. Hence the arguments for and against an alleged miracle are arguments of testimony against testimony. Strictly, in accordance with his view of belief and induction, Hume had no right to talk about what we *ought* to believe as to matters of fact, but only to discuss the causes of our beliefs. And love of the wonderful is as good a cause of belief in a miracle as constant experience is a cause of belief in a natural law.

PROFESSOR S. P. HAYES has leave of absence from Mount Holyoke College for the present semester. He is spending the half-year at the Pennsylvania Institution for the Blind in Overbrook, where he is giving mental tests and making a study of the psychology of the blind. His work at Mount Holyoke is in charge of Dr. J. H. Coffin, professor of philosophy and psychology in Earlham College.

DR. ROBERT M. YERKES, of the department of psychology of Harvard University, and psychologist to the psychopathic hospital of Boston, lectured recently before the Minnesota chapter of Sigma Xi on "Psychological Methods of Examination and Diagnosis."

PROFESSOR JAMES ROWLAND ANGELL, of the University of Chicago, is giving a course of lectures on "The Makers of Modern Psychology" on the Spencer Foundation at Union College.

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DEWEY AND URBAN ON VALUE JUDGMENTS

THERE is an important class of theories according to which value is an object of judgment. This does not mean simply that values, like other things, may be and are judged; but that in this case, at least, the object is created by the act of being judged. Valuation is judgment, and to be valuated is to be valuable. It is possible to hold that all judgment is, in keeping with this view, either valuation, or to hold that valuation is a special kind of judgment. The latter or dualistic view of judgment is familiarly expressed in the antithesis between the "practical" and the "theoretical" reasons, or between "appreciation" and "description," or between "normative judgments" and "judgments of fact," or between *"Beurtheilung"* and *"Urtheilung."*[1] The former view is exemplified by Schiller's view that all judgments are "practical,"[2] and by Rickert's view that judgment is essentially an act of acceptance or rejection.[3] Most dualistic views are only provisional, a stage in the reduction of all judgments to the type of valuation. This is broadly true of all those theories of judgment that appear in voluntaristic philosophies, such as pragmatism and Fichtean idealism. The practical version of judgment is first distinguished from a popular or traditional version of judgments of fact, after which the latter is corrected and reduced to the former.

Among the views which regard the practical or valuating judgments as constitutive of values, it is important to distinguish two classes, the humanistic and the absolutistic. The former construe judgment in an anthropological or psychological sense, the latter in a transcendent, metaphysical or "logical" sense. According to the views of the former class, values are created by the actual judgments of men, with all their relativity and variability; whereas according

[1] Windelband, *Präludien*, third edition, pp. 52–53.

[2] F. C. S. Schiller, "Are All Judgments 'Practical'?" this Journal, Vol. VII., p. 682.

[3] ". . . der eigentliche Kern des Urteils, das Bejahen und Verneinen, ein Billigen oder Missbilligen, ein Stellungnehmen zu einem Werte ist." H. Rickert, *Der Gegenstand der Erkenntniss* (1904), second edition, p. 108.

to views of the latter class, values are created only by some qualified, standard, or universal judgment which is somehow immanent or presupposed in the fallible judgments of finite minds.

To the former, or humanistic class, belongs the relatively crude view of Westermarck, and the more sophisticated and circumspect views that have recently been set forth by instrumentalists and pragmatists. Professor Dewey may be assumed to speak representatively if not authoritatively for this school. He presents the crux of the matter when he states that "practical judgments" imply "the seeming paradox of a judgment whose proper subject-matter is its own determinate formation." "To judge value," he says, "is to engage in instituting a determinate value where none is given." In other words, "the object of a practical judgment is some change, some alteration to be brought about in the given, the nature of which change depends upon the judgment itself and yet constitutes the subject-matter of (the?) judgment."[4] This means, I take it, that in this peculiar and "paradoxical" case value is both that which is judged, in other words the objective component of the judgment, and also a larger whole which embraces or involves the judgment. This is, to say the least, paradoxical, and could scarcely be regarded as a satisfactory disposition of the matter even though no other account of the facts should appear to be possible.

It is fair to state that Professor Dewey disclaims any intention of dealing with the nature of values. "I am going to deal with valuation," he says, "not with value."[5] It soon appears, however, that he regards "valuated objects" as the only values worth studying; and he continually speaks of values when he means valuated objects, as though the two expressions were interchangeable. Thus, for example, he speaks of value as "practical," "existent," "objective," and as a factor in "completing a situation," when the whole force of the argument depends on identifying value and valuated object. It is true also that he takes pains to distinguish two senses of "valuing." There is, on the one hand, the attitude of "prizing," or "esteeming," merely, which is a "practical, non-intellectual attitude"; and there is the attitude of "appraising or estimating," which implies a judgment. The two are commonly merged and confused in the conception of "appreciation."[6] But though he calls attention to the confusion and deprecates it, he does not, as we shall see, avoid it. And though he does not deny that the simpler emotional attitude defines values of a sort, he does at any rate clearly affirm that the judicial or intel-

[4] J. Dewey, "The Logic of Judgments of Practise," this JOURNAL, Vol. XII., pp. 516, 517, 521–522.

[5] *Ibid.*, p. 512.

[6] *Ibid.*, pp. 512–513, 520.

lectual attitude also determines values, and it is to these values that he confines attention in the present paper.

In examining the examples upon which Professor Dewey bases his contention, and which he thinks have been strangely neglected in the orthodox accounts of judgments, it is very important to bear the following general consideration in mind. *It is impossible to interpret any judgment merely from its verbal record.* What is judged in any given case depends upon what is intended at the time by the judging mind. A dozen different judgments may be expressed in the same linguistic form. This is peculiarly true of the very complicated judgments which the author cites. He would himself, I take it, be the last person to deny this; nevertheless his failure to specify in each case just what the judge may be supposed to mean by what he says, gives to his whole discussion an ambiguity which assists his argument, but does not clarify the issue. Take, for example, his favorite instance, the judgment "I should consult a physician." This might mean: 'In view of the general practise of mankind, this is a case for medical advice.' One would be mistaken in this judgment provided one were misinformed as to the general rule of procedure, or provided one had exaggerated one's symptoms. There would be no reference, express or implied, to the probable outcome; and should the act prove fruitless, one's judgment would in no wise be proved at fault. Or this same linguistic form might mean: 'My state of health being such as it is, if I consult a physician I shall probably be cured.' In the case of such a judgment of probable outcome, while there is a future reference, the contingent event would still not affect the truth of the judgment. Though one should in the sequel not be cured, one's cure would still have been probable in view of the statistical evidence. Or one might mean: 'If I consult a physician I shall be cured.' Here again, although there is a hypothetical reference to a future event, the non-occurrence of that event would not disprove the judgment, in case I did not fulfil the condition and consult the physician. Or, finally, one might mean: 'Because I am going to consult a physician I shall recover my health.' This is evidently a complex judgment, one component of which does depend for its truth or error on a future contingency. It should be analyzed into two judgments, because either one of two independent facts would disprove it. If there should be no causal relation between consulting physicians and the recovery of health, I should be mistaken; or if I should not as a matter of historical fact recover my health, I should be mistaken, but on different grounds.

In other words, the identity of a judgment depends not on its verbal form, but on what it virtually appeals to for its disproof or verification. Every judgment has objective reference of two sorts,

both of which are necessary as an act of judgment, independently of its being true or false. In the first place, it is "about" something, whose reality is not in question, and which serves as the locus of verification. In the second place, there is something judged. A judgment, in short, is like a promissory note, which has its date and place of maturity, and its amount. The first of these factors has usually been termed the "subject" of the judgment, because it is commonly named by the grammatical subject. If, however, we regard the judgment as an act of mind directed to some feature of its environment, it is more convenient to term this the "object" of the judgment. It must somehow be equally compatible with the fact which would prove the judgment, and with the fact which would disprove it. It may, perhaps, best be regarded as a constituent of both alternative facts. Thus, in judging that "the Emperor of Austria is dead," there is "the Emperor of Austria," in any case, as the common constituent of his being dead or alive. The object of the judgment is "the Emperor of Austria" in the sense that both the verifying fact and the discrediting fact would concern him. I am judging something *about* "the Emperor of Austria"; who constitutes, therefore, the quarter to which one must resort for evidence relevant to this particular judgment. Were there no such person, then the judgment would be no judgment; or it would be analyzable, as Mr. Russell has shown, into two judgments: "there is an Emperor of Austria," and "he is dead." I leave open the possibility that all judgments may ultimately be reducible to the form "there is so and so," or "this is so and so." In this case all judgments would be like a promissory note redeemable at any time or place. But if one were forced to this conclusion it would be owing to the very principle for which I am here contending, the principle, namely, that every judgment is about something whose existence is given or unquestionable.

But in every judgment there is not only what the judgment is about, but *what is judged about it.* Thus the judgments "the Emperor of Austria is dead," and "the Emperor of Austria is alive," are both about the same object, but in the one case one thing is judged about him, and in the other case something else. This we may term the "objective" of the judgment. It is that hypothetical state of the object which would verify the judgment, or fulfil the expectation which the judgment expresses. It is not a fact, simply, but a hypothetical fact. In other words, it is a component of the more complex fact of my judgment. It is that toward which my motor set or determining tendency is directed; but *only in the sense of being the direction of that set or tendency.* It is adverbial in character, a

qualification or description of the judgment; in short, the way I judge.[7]

It is because, then, of such a virtual appeal to the same object, and such an identical expectation with reference to that object, that it is possible for two or more minds, or the same mind at different times, to judge the same. Thus the outcome of the present war is the object of many contemporary judgments. Some of these judgments are, furthermore, such that the victory of the Allies would fulfil the expectation that underlies them. In that case, though they be expressed by different minds, at different times, and in different languages and grammatical forms, they would be said to constitute the same judgment. Unless this sort of epistemological identity were possible, knowledge could have no history and no social status. It would not even be possible for a hypothesis to be verified, for it could not be the same hypothesis which was first entertained, and then held persistently in mind until the appropriate evidence should be forthcoming. It would not be possible for old judgments to be overthrown, or for one scientist's judgment to be confirmed by another's, because the same judgment could not be reconsidered or tested by different investigators.

Professor Dewey's failure to state precisely what constitutes the identity of a judgment and makes it just that judgment, gives to his whole discussion an elusiveness and fluidity that makes it almost impossible to criticize it. The critic must first formulate the view for himself, and since he can not certainly be sure of exhausting the possible meanings of an ambiguous text, he must always run the risk of missing the point. I shall endeavor to put that construction on the text which reflects its characteristic motive, and which at the same time sheds most light on our general problem of value.

Suppose a situation in which I suffer from ill-health and hope to recover through the agency of a physician. There are several items in this situation which must be distinguished. I suffer from ill-health and am aware that I dislike it. I desire recovery and am aware that I desire it. I believe that consulting a physician conduces to recovery. I adopt the course of consulting a physician, as a course conducive to my recovery. I believe that I am going to recover, and since in this case the object of belief and of desire coincide, I hope that I am going to recover. Subsequently, because of what I dislike,

[7] I can not here enter into a detailed analysis of this type of process. I am confident that it can be dealt with in behaviorist terms, provided we recognize that all behavior has to be described in terms of direction and goal, as is implied in the use of such terms as "set," "tendency," "*Aufgabe*," *etc.* The function of words requires the same sort of analysis. For a further discussion of these matters, *cf.* my articles on "The Truth-Problem," this JOURNAL, Vol. XIII., especially pp. 561 ff.

desire, and believe, I do consult the physician, and thereupon, in consequence of having consulted the physician, I recover. There are evidently many more or less independent components in this very complex process, some of them judgments, and some of them "non-intellectual" affective or motor attitudes which condition values. But there is no case so far as I can see of a value's being constituted by a judgment of it, or of value's being both cognized and created by the same mental act.

In so far as I dislike my present symptoms, they are evil. My judging that I dislike them does not make them evil, but simply refers to their being evil as a fact. It is like any perceptual judgment, except in respect of its peculiar degree of certainty.

In so far as I desire recovery, my future recovery is good. It is good relatively to my present desire, and its goodness would not be undone even though I should perish in the very moment of desire. This is the kind of value that attaches to all ideals, however quixotic, though they be "unrealized" or even unrealizable. That I should have dreamed a dream is sufficient to impart to the content of that dream a value that is quite independent of my rude awakening. Owing to this fact, which no theory of value can afford to disregard, it is evident that the realm of values exceeds that of existence. It is necessary to attach the predicate of value to "prospectives," possibilities, hypotheticals, or subsistents. That I should be aware that such is my desire introduces no new value, but merely makes me cognizant of the fact of my desire.

The belief that the consulting of physicians conduces to recovery is like any belief in a law or general rule. It is not peculiar to a practical or valuing situation, and it conforms to the ordinary and unparadoxical notion of judgment as referring to a given and independent state of things to which the judging mind appeals and defers.

The act of adopting the proposed plan as conducive to the desired result may seem to introduce something new, but that is only because it requires further analysis. We must distinguish the act of adoption from the judgment which justifies it. In so far as my adoption of the projected course of action implies that I give it preference or take a favorable attitude to it, it possesses value. Though doubtless weak in intensity, this is a case of what Professor Dewey calls "prizing" or "esteeming." It invests its object with value, but it does not judge or cognize value; though it might, of course, be accompanied by a reflective awareness of the attitude. The judgment as to the sequel does cause me to take the attitude. I do adopt the plan as one believed to conduce to a certain result; but that which in this case gives value to the plan is not its relation to the sequel, but the affective attitude to it which my judgment as

to the sequel has led me to take. Or, it is because my judgment as to the sequel has caused me to take the attitude, that the plan possesses value. Though a judgment led me to the attitude which invests the plan with value, *that* value was not what I judged.

But does the mediating judgment in this case possess another value as its object? In a certain sense, yes. The judgment that the plan will bring the desired result, does attribute to the plan a transferred or indirect value. There is no objection, so far as I can see, to extending the realm of value to include things which, though not valued themselves, are instrumentally or causally related to things which are. But in this case it is evident that the transferred value in question is owing not to the *judgment* of its causal relation, but to the *fact* of that relation. The plan would not have this kind of instrumental value, unless the causal judgment were *true*. The existence of the judgment is not sufficient if the judgment is erroneous; and the plan would have the value in question even if there were no judgment. It follows that while the judgment is in this case in a certain sense a judgment of or about value, it does not create the value which it judges.

The attitude of hope is, as we have seen, a mixed attitude. It is desire qualified by belief. But its object possesses value by virtue of the component of desire. Beliefs as to the future, predictions or expectations, have nothing to do with value, except in so far as they are affectively tinged. Desiring recovery, that future contingency possesses value independently of the element of belief with which it is here associated. It would not be less valuable in the case of despair than it is in the case of hope. The expectation or prediction does undoubtedly refer for its verification to events that have not transpired at the moment of the judgment; but this is equally the case with scientific predictions in which one is not in the least emotionally concerned. Such verifying events must be awaited, but their futurity does not contradict their given or independent character. They are not the products of the judgment, but are facts to which the judgment is prepared to submit.

When the whole performance is consummated, as we suppose it to be, by my recovery of health, we have value in two new senses. In the first place, the state of health is good as having been antecedently desired. Its value is not determined by an act of judgment, but by what we call the "fulfilment of desire." The same state may also possess value, although this is not necessarily the case, as something now presently liked or enjoyed. Its value in this respect also would be independent of any act of judgment. In these two senses, as fulfilling and terminating desire, and as being the immediate object of feeling, an existence may be said to possess value. To judge value

of this type would involve the additional act of reflective awareness of the desire as satisfied by the existence, or of the feeling as directed to it. While it might plausibly be maintained that such a reflective awareness invariably accompanies the affective attitudes in question, it is in any case a different and distinguishable thing, having a different object. The difference of object is the same difference that must be supposed to obtain in any case of introspection between a mental state and the observation of it.

Finally, we have to consider the fact that the outcome of the performance, the condition of health itself, was due to the antecedent judgments concerning it. In this case, we appear to have a judgment or a series of judgments which bring to pass their own object. I judged that I was going to recover my health, and then for my very judging of it, I do recover my health. How can my judgment have had its object, when that object still lay in the future, and when through its being causally dependent upon the judgment, it could not come into existence until after the judgment had had time to operate? We seem to have a judgment which is somehow antecedent to a part of itself. Here, as I understand it, is Professor Dewey's paradox.

But instead of allowing ourselves to be driven to a paradox, we should, I submit, insist upon such an account of the matter as shall avoid the paradox. We must deny that that future contingency which is the objective component of the judgment, and which is indispensable to the judgment's occurring at all, is *not* the same as that later event which may or may not occur, or which if it does occur is conditioned by the previous occurrence of the judgment. We must, in other words, supply enough entities to go round. This is entirely possible if we provide an *objective,* or *hypothetical,* or *possibility,* as the content of the antecedent judgment, and distinguish it from the later existence; precisely as we would distinguish the hypothetical payment or failure to pay which is defined by the face of the note as what would honor or dishonor it, from the actual conduct of the payer. These two objects must sustain a peculiar and intimate relation to one another, in that the latter must be the case that "satisfies" the former. It is even true, as we have seen, that the two must intersect, or possess some common constituent, which constitutes the judgment's "maturity," or locus of verification. In the example before us this common constituent comprises the time of the recovery vaguely marked as later than the consultation with the physician, and the particular individual whose health is in question. Health is *now due from this individual,* according to the terms of the judgment. These, and doubtless other factors as well, enter into both the objective and the historical occurrence, and without them

neither the judgment nor the occurrence could exist. But even though the constituents of the objective and of the fact should coincide altogether, it would be necessary to attribute to them some difference of ontological status. I have proposed above that the objective should be regarded as a description of the behavior of the judging organism, a goal defined by its set or determining tendency. In some sense this sort of thing must be provided for, and however we provide for it, it must be entitatively distinguished from that actual occurrence or event which would realize it. An objective sustains two relations, one to the act of mind which intends it, the other to the existence which exemplifies or is, in the mathematical sense, a value of it. It may sustain the former relation before it sustains the latter, or even in cases when it does not sustain the latter at all.

In some such way as this the paradox may and must be avoided. We should then have a judgment not bringing about its own objective component, but bringing about the existence which exemplifies its objective component. And the value which is prospectively created by antecedent desire, and prospectively apprehended by the judgment which illuminates and guides that desire, would be different from that value which eventually comes to pass.

I submit, then, that the character of practical judgments requires no amendment of our ordinary notions of judgment. Judgments of value do not create that value-object which they judge; nor are they causes of their own component parts.

In a recent article,[8] Professor Urban professes, albeit darkly and dubiously, to be of one mind with Professor Dewey. I shall not attempt to determine whether two views, both of which unfortunately impress me as dark and dubious, are or are not identical. But since Professor Urban "thinks" they are "in agreement," I shall take his word for it and assume that the following remarks are not irrelevant.

Professor Urban comes out expressly for the doctrine that the "value-judgment" is to be distinguished from all "judgments of truth and fact."[9] Unlike most of the authorities he cites (including, I should suppose, Professor Dewey) Professor Urban is a dualist in respect of judgment. But what he means by the antithesis is far from clear. What is a "judgment of truth"? Is it a judgment which predicates truth of a proposition? That would surely be too occasional a form of judgment to constitute a type coordinate with valuation. It is more probable, since he links judgments of truth with judgments of fact, that he means to refer to judgments which *are* true or false. The antithesis would then be between judgments that are, and judgments that are not, either true or false. But since

[8] This JOURNAL, Vol. XIII., p. 673.

[9] *Ibid.*, p. 683.

it is customary to mean by judgment that act of cognition that is distinguished by the alternative of truth or falsity, valuation would appear to be a judgment that lacks the generic judgment character. Certainly the antithesis must remain hopelessly obscure until one has defined what one means by judgment in general, and has distinguished this cognitive form independently of the accident of truth or error. It would seem much more in accordance with usage to say that if valuation is neither true nor false, it is something other than judgment.

But let us consider some of the motives that have induced Professor Urban to set up his antithesis. In the first place, he points out that value attaches not to objects, but to objectives, that is, to complexes of the type "that x is ϕ."[10] But this is peculiar neither to value nor to judgment. Factuality certainly attaches to complexes of the same sort, as when we say, "It is a fact *that, etc.*" This would be regarded as a case of judgment, but not of value. On the other hand, that which is desired, hoped, feared, commanded, forbidden, or otherwise regarded in dozens of ways that constitute the commonest affective-motor attitudes, is also "that so and so shall be." In these cases we have values, but not judgments. It is undoubtedly true, as Meinong, Russell, and many others have recognized, that these attitudes require the admission of *Gegenstände* that are not objects or things in the ordinary sense. But they furnish no criterion by which to distinguish judgments of truth and fact from other judgments, nor valuing from non-valuing attitudes.[11]

In the second place, Professor Urban argues that there are certain *a priori* "propositions about value" (are these propositions truths or facts?) which are independent of the particular psychological facts about interests, and which are coordinate with the *a priori* propositions about being. Thus, he contends that all objects have either positive or negative value, and that of any two values one must be higher than the other. But it seems perfectly clear upon an examination of the argument, that these alleged *a priori* propositions are either applications of *a priori* propositions concerning being, or are obtained from the empirical character of interest. That every object must possess positive or negative value, can be regarded as *a priori* only in so far as it is derived from the law of excluded middle, negative value being regarded as the non-possession of value. To argue that all objects possess value requires an appeal to the

[10] "That" is here used as a conjunction.

[11] I find nothing seriously objectionable in Professor Urban's contention that "value is an objective" ("Value and Existence," this JOURNAL, Vol. XIII., p. 464); although I think its universality to be doubtful, and I think it undesirable to leave objectives as entitative finalities. But I do object to the supposition that this in the least argues for the uniqueness of "value judgments."

empirical character of interest. "All objects, as objects, are of interest either actually or potentially, and wherever there is interest there is value."[12] But how does Professor Urban know that all objects are as such capable of being objects of interest? If he knows it at all, which is doubtful, it is because of the actual ubiquity of interest as a modality of consciousness, or the psychological possibility of associating an attitude of interest with any other attitude by which a thing becomes an object.

The necessity of a value's being "higher or lower" than any other value is derived, if at all, either from the empirical fact that values have all-commensurable intensive magnitude, a contention that has often been disputed; or from the empirical fact that interest is always psychologically associated with preference, that is, from the fact that interests are always (?) so interconnected with other interests in one subject that the expression of one interest implies at least the momentary subordination of other interests. In other words, Professor Urban's generalizations about value are facts about value, which are either of the general logical sort common to all facts, or of a particular sort derived from the special peculiarities of that sort of psychophysical fact known as interest.

In the third place, Professor Urban insists that the conception of "ought," which he believes to be peculiar to value-judgments, is irreducible to the categories of being and non-being. "The value-judgment," he says, "is not '*A* is as it ought to be,' but rather 'that *A* ought to be.'"[13] But Professor Urban must be aware that the difficulties, if any, attaching to this form of judgment, are not peculiar to value. What is required is a judgment that shall assert something only hypothetically or contingently existential. But that is the case with all judgments involving variables. Suppose that one says that "x is a man implies x is mortal." One does not assert that "there is a man," or that "this is a man." Nevertheless, one is judging either truly or falsely concerning a logical or implicational fact. One may express it, if one wishes, by saying, "if a case of man should occur, it would be mortal." And similarly with obligation. Some purpose requires or implies x. This can equally well be expressed as "x ought to occur," or as "if a occurs and is a value of x, then it is such as ought to occur." Similarly, "the comet ought to be visible in such and such a place at such and such a time," or "the key ought to be of such and such a shape"; meaning that the law of the comet's motion and the shape of the lock determine the conditions of visibility or fitness, whether or not these conditions are fulfilled by existence. Judgments of this sort are not peculiar

[12] *Ibid.*, p. 675.
[13] *Ibid.*, p. 687.

to value, nor are they distinguishable from judgments of truth and fact.

The *prospective* character of judgments of "ought" is even less calculated to prove what Professor Urban wants to prove. "It is the very nature of the value-judgment," he says, "that it apprehends, not something completely given, but rather something to be. Value is not a determination of being, but a direction of becoming."[14] It is incredible that Professor Urban should propose to restrict judgments of truth and fact to judgments concerning the completely given. The commonest of all scientific judgments are those concerning the future, the so-called judgments of prediction. And only less common than these are judgments asserting a direction of becoming, such, for example, as the generalization based on the second law of thermodynamics, or such laws as Spencer believed to determine cosmic evolution. The most familiar biological phenomena, such as growth and instinct, can not be judged at all except in such terms. Are such judgments, then, value-judgments? And are they not judgments of fact and truth?

Professor Urban accuses me of confusing "the qualities of an object on account of which it is valued with the value itself, the fact that it ought to be."[15] Now whether we prefer to use the substantive "value" to denote the object which is valuable, or the fact that it is valuable, is a matter of no importance. In any case, Professor Urban's essentially sane habits of mind prompt him here to identify value with the *fact* that a thing ought to be. A judgment of value would then be a judgment regarding such a fact. Like any other judgment, this would be true if the fact were as judged, and otherwise false. This leaves one quite in the dark as to the constituents of this particular kind of fact, whether, for example 'ought' is an intuited ultimate, not further definable, or whether, as I think, it consists in an implicative relation of interests. But at least it makes it perfectly clear that there is no differentia of value to be found in the analysis of judgment.

I still believe that the underlying cause of this whole muddle is a confusion of the essential act of judgment with the motor-affective attitudes with which it is psychologically associated. This is almost invariably betrayed by an author's fondness for such hybrids as "appreciation," "approval," "acknowledgment," *etc.* If one wishes to emphasize the fact that in our experiences of value, judgment, affection and will are intimately associated, well and good. But then let the essential character of judgment be first distinguished from its accidental associations. Fact, existence, truth, object, objective, are

[14] *Ibid.*, p. 687.
[15] *Ibid.*, p. 685.

terms belonging to the analysis of judgment as such. The structure and function of judgment can not be described without reference to them. Then, and then only, after one has discriminated judgment abstractly, can one safely venture into the perplexing field of the subjective and objective varieties of judgment. Then one may, if one wishes, collect and label a whole menagerie of judgments, not only value judgments, but verbal judgments, visual judgments, private judgments, public judgments, German judgments, American judgments, and German-American judgments,—with some guarantee that at least they are all judgments.

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A REINTERPRETATION OF JEWISH PHILOSOPHY[1]

IT seems rather presumptuous to read into Jewish philosophy an interpretation different from the one the historians of philosophy have been wont to give us. But the gap between the actual Jewish philosophy and its interpretation is, it seems to me, sometimes so great that one has to deny either the testimony of the philosophers or that of the historians.

The obscure and often unintelligible language which characterizes most of the medieval Hebrew writings, and the lack of system and order, have often led our historians to mistake the form for the content. The form is modeled on the neo-Platonic, post-Aristotelian, and Arabic writings; but the basis, the mode of thinking, the dialectic, are primarily Jewish. And this has not been sufficiently noticed. The abnormal conditions in which the Jewish life developed, made the Jew eager on the one hand to hold on to his own, and on the other hand to assimilate whatever seemed to him best in other cultures and to harmonize it with his own. It was the desire, I think, of reinterpreting the past in the value of the present, that has originally given birth to Jewish systematic philosophy. The impulse of philosophizing came from the philosopher's desire of showing that his Jewish traditions were identical with the reflective thinking of his particular age. It is, therefore, not surprising that the Jewish philosopher borrowed from his environment the problems, the forms, the technique, the vocabulary, and that he even reached the same conclusions. For this was the *a priori* hypothesis with which he started, namely, to reach the same conclusions.

But underneath this outer surface run several Jewish streams which have escaped the attention of the historians. This oversight,

[1] A paper read before the Conference of Former Students of the Division of Philosophy, Columbia University, April 18, 1916.

on the one hand, and the historians' lack of insight into the historical continuity, together with their conscious or unconscious reading of modern thought into Jewish philosophy, on the other hand, are responsible for some of their fundamental errors. In the first place, they overlooked the influence of the logic of the Talmud on Jewish philosophic thought. Secondly, they gave more prominence to the philosophers who approached nearer to Greek or to modern thought. Thirdly, they saw no original expression in Jewish philosophy. Fourthly, they confused the religious form with the philosophical content of the works of the Jewish philosophers. Fifthly, they took one aspect or another for the whole of Judaism. Several other errors could be pointed out, but it is impossible for me to touch upon them here.

I. The place which the Talmud occupies in Jewish life has of course been generally recognized. But no sufficient attention or perhaps no attention at all has been given to the bearing of the logic of the Talmud on the Jewish mode of thinking. There is a characteristic set of definite logical principles underlying every tractate of the Talmud, whether it deals with jurisprudence or with ceremonials. And these seem to me to be the logical categories which have molded the Jewish mind to a certain extent. It could be shown that these principles are at the bottom of medieval Jewish metaphysics. For instance, the question of nominalism and realism usually attributed to Greek influence, Gabirol's pantheism, Maimonides's conception of God's knowledge—these are almost a continuity of one of the fundamental logical principles on which the Talmud is based, namely, the relation of the particular to the universal, and *vice versa*.

II. The historians of philosophy seem to have searched in Jewish philosophy for contemporary problems rather than for specific Jewish ones. They have hardly noticed the metaphysical and ethical problems treated from a Jewish point of view, which are contained in works on Halacha, literature and history. The authors of these writings are not technical philosophers, but in them the genuine Jewish thought is not hidden under alien speculation. As far as an account of Jewish philosophy is concerned, *qua* Jewish, the antagonists of Maimonides, called the Obscurists, are just as important factors in the development of Jewish thought as the enlightened followers of Maimonides. For the historians, Philo, Saadya, and Maimonides are the pivot of Jewish thought. And yet even Maimonides is not the typical representative. He lacked the sense of historical value; he crystallized into thirteen articles the Jewish creed which had been intended to remain vague and indefinite; he overlooked the emotional side of Judaism and emphasized some points rather than others, to justify Judaism in the eyes of Arabic or Greek philosophy.

No sufficient place has been given to Nachmonides as a philosopher, and yet he is more original than the others. He took as his starting-point the facts of Judaism, including even the narratives of the Talmud. He diverted from the too-much-discussed problem of the relation of religion to reason, and turned his attention to the relation of religion to men. He tried to remove the antithesis between soul and body, and asserted that the contempt of flesh was inconsistent with religion. He upheld the doctrine of Judaism that man should rejoice on the day of joy, and weep on the day of sorrow.

Jehuda Halevi, who is the typical Jewish philosopher *par excellence,* is more honored as poet than as philosopher, and is said to be the imitator of the Arabic philosopher Alghazali.

The Kabala is often done away with by historians as not being of Jewish origin. And yet it has permeated Jewish life. It is an aberration of the mind, but a Jewish aberration.

Even though the historians gave an individual place to each philosopher, yet when they came to sum up the general characteristics, they eliminated certain factors and overemphasized others. It is only in this way, namely, in overlooking the other phases of Judaism, that one can identify it with rationalism. And the historians have been led to this view through their over-anxiety to show the affinity of Judaism with modern philosophy. From their standpoint, each stage of Judaism was gradually ascending to reach its final cause and culminate into Kantianism. And accidentally Kant happened to have been not a Jew.

Neumark asserts from the start that it is the task of the modern historian to base the fundamental principles of Judaism on modern science and philosophy. We need a transcendental system of philosophy, based on an ethical monotheism, he says. This would mean that what we need is the portrayal of Jewish philosophy along lines somewhat similar to Kant's philosophy. This, Herman Cohen has done, and also Lazarus, to a certain extent. The latter's main concern is to show that the Bible contains the categorical imperative, that Jewish ethics is autonomous, not heteronomous, that it is universal in its nature, and meets with all the Kantian requirements. In seeking for similarities, Lazarus seems to have overlooked the essential differences. Jewish ethics is not universalistic; it deals not with the abstract, but with the concrete. It is based on the assumption that the Jews are a chosen people. And it would have been more interesting in a work on Jewish ethics, to see how a system of ethics was worked out of this principle, rather than how this system approaches that of Kant.

Even the great Samson Raphael Hirsch, of Germany, whose slogan was "back to Judaism," seems to me to be somehow under

Fichte's influence, when he lays emphasis upon the destiny of man, so forcibly brought out in Fichte's *Vocation of Man.*

Krochmal, in his famous work *More Nebuchei Haz'man,*[2] reduces the philosophy of Jewish history to a series of theses, antitheses, and syntheses, in order to make it fit in with Hegel's idea. Judaism becomes Hegel's *Phenomologie des Geistes.*

Other historians who find the embodiment of the modern spirit in Spinoza, try to read Spinoza backwards into the rest of Judaism.

III. It will not, therefore, be surprising that after having stripped Jewish philosophy of all its fundamental characteristics, the historians failed to discern in it any original Jewish expression. The Jewish Encyclopedia does not have even a special rubric for Jewish philosophy, but places it under Arabic Jewish philosophy. Neumark is the only one who sought to trace a continuity between the early prophets and the medieval philosophers. But he again places it in rationalism, which is no more a Jewish than a Greek or German characteristic.

IV. Joel, Eisler, Munk, and others are all unanimous in the opinion that at best Jewish philosophy is a religious philosophy—religous in their sense, *i. e.,* supernatural. But already in the twelfth century Jehuda Halevi had pointed out the self-contradiction of religious philosophy. "Philosophy and Religion," he says, "stand in two totally distinct spheres of thought, and fulfil two distinct functions. Philosophy has no right to deal with God, with faith, and with religion. Its domain lies in the natural sciences. But it is distinguished from any particular science and superior to it because it is the science of sciences."

It is true that it is hard to dissociate in the medieval writings the religious from the philosophical speculations. But we must take into account first, that this religious garb was the characteristic stamp of the time. Secondly, we must also reckon with the fact that we do not possess in print all the medieval productions. There is reason to believe that with the decline of scholasticism it was only the religious works that were still of interest to be printed, while the others remained in manuscript form. In spite of their religious titles many medieval writings deal with various problems, ranging from the metaphysics of heaven to the art of cooking. They treat of knowledge, instincts, freedom, foresight, purpose, chance, and several other problems of psychology, metaphysics, and logic. They enlarge upon the concept of life, and insist that life is a good given to mankind. "God," said Saadya, "has implanted in us a love for this world; we must love everything in the world and have a knowledge of and in-

[2] *Guide to the Perplexed of the Time.*

terest in everything." And religious worship, as they all express it, consists in the joy of our social life and society.

At all events, if all the problems, whether metaphysical or ethical, center around God, it is because, if I may say so, God, as conceived by the Jewish philosophers, was but an abstract and synonymous term for life. Hence a knowledge of God is necessary in order to gain a perfect knowledge of life, and *vice versa.* Maimonides refuses to teach his philosophy of religion to his favorite pupil unless he learn first astronomy, mathematics, physical and natural science, and logic. The attempt of the medieval writers to reconcile their thoughts with the Bible was not motivated by a theological impulse, as the historians have assumed. I need not dwell upon the fact that the characteristic of the Bible is not merely its religious aspect, but the life with which it vibrates. And it is in this light that it was looked upon by the medieval philosophers. For them it was a record of the race experience, a crystallization of the traditions and life of the people. After seeking in the Bible all the proofs that could bear favorably upon his theory, one of the philosophers, Gersonides, would seal his chapter with the prayer, "The Lord be blessed, I have verified my theory through facts."

The meaning of religion as understood by the Jewish philosophers has almost entirely escaped our historians. Saadya gives to religion the same definition that Aristotle gives to ethics. The Torah helps to determine the mean, and thanks to its laws the religious innate faculty can exercise its function and not be an abstract pure form.

Jehuda Halevi represents the Jewish Rabbi as saying to the king of the Khazars: "From a philosophical point of view, all religions are equal, and you can even invent one if you need it as a controlling force for the government of your people." "But," goes on Halevi, "religion is not based on thought, but on feeling. Certain events supposed to have occurred for the good of society and the individual, make such a deep impression upon our soul that a religious feeling evolves. And the characteristic religion of each nation is but the recognition of a different series of events supposed to have occurred for their own good. Jewish religion is a code regulating our life so as to adjust our behavior to the historic traditions."

Ibn Daud writes that a true prophet could not give a religion which the necessities of life would not permit us to follow. Religion, he says, must be such as to work for the good and the freedom of the people.

Thus, Jewish philosophy is not a religious philosophy, but the Jewish religion is a moral theory of life. It is an ethical culture, but a specifically Jewish culture. It is a religion of humanity such as

that of August Comte and John Stuart Mill, but worked out on national lines.

Now the questions arise, wherein lie the Jewish keynote and continuity, what is Jewish philosophy? Viewed as a whole, the historical divisions are merely artificial ones. The Judaism of to-day is just as much a Judaism as that of Biblical times. Perhaps every particle of it is changed and renewed, just as our own body is constantly changed. But there is a stream of consciousness which makes the one as real as the other; even though they be different in their respective manifestations. And it is this historical consciousness, I think, which forms the basis of Jewish philosophy. It seems to me to be primarily a nationalistic philosophy both in its supernatural and in its natural aspects. In its theological form it is the chosen people of God, with whom God contracted a covenant. In its moral form it is the ethical nation wherein each individual is bound to be moral, so as not to desecrate the whole. In its logical form it is the relation of the species and the individual. In its metaphysical form it is the relation between the organism and its parts. The various phases of Jewish philosophy go hand in hand with the vicissitudes of the nation. When the twelve tribes needed a transcendental force, a common ideal, a common bond, that should, on the one hand, bind them together, and, on the other hand, differentiate them from other groups, then the greatest emphasis was laid upon the national aspect of God. When the nationalities had become strengthened by natural bonds, then only began to evolve the idea of a universal God. And when the national feelings became looser, God assumed once more a national form, and proselytizing was frowned upon by the Talmudic Rabbis. Again, it was the instinctive national spirit that led Philo, though somewhat of an assimilator, to bring out the harmony between Judaism and Hellenism, that the former might not be crushed by the latter. It was the instinctive fear to see the national religion overcome by the rationalism of the age, that brought Saadya to give a rational basis to that religion. It was the desire to bring out what was at the heart of Judaism that led Bachya to write his *Duties of the Heart*. It was the fear that Aristotle's philosophy would shatter Judaism that led Maimonides to write his *Guide to the Perplexed*. And it was the fear that this very *Guide* might perplex the Jewish mind that evoked much antagonism to it. It was the true understanding of Judaism that brought Jehuda Halevi to direct his attack against Greek philosophy, and seek the best expression of Judaism in Judaism. It was also the national spirit which, translated into logical terms, means the particular in the universal and the universal in the particular, that may have led Ibn Gabirol to his pantheism. It was the romantic idea of nationalism which seems to me to be

greatly responsible for the Kabala. The Kabalist tried to rebuild, in his imagination, the national kingdom with a crowned king or God at its head, who binds together with common ties and ideals his dispersed but happy and obedient subjects. It is again the idea of nationalism that permeates the Hebrew literature of the nineteenth century and finds its highest expression in the only genuinely Jewish philosopher of our times, Ahad Ha'am.

I do not mean to emphasize nationalism as an antithesis to individualism. Judaism makes no artificial abstraction of one phase of life or another. At some critical periods, it is true, more emphasis may be laid on one point than on another, according to the exigencies of the times. But as a whole it represents life in all its aspects, and any one-sided characterization of it, such as legalism, mysticism, spiritualism, materialism, rationalism, *etc.*, shows a lack of penetration into its real essence. For Judaism is none of these, or it can be said to be all of these which form inseparable aspects of its harmonious whole. It can not be defined because it is not a closed system. To borrow an expression which James used in another connection, "it is still in the making and awaits part of its completion from the future." One of the Talmudic mottoes, *makom l'hithgader,* could be interpreted to mean that the completion of the past can be effected only by the future.

I do not want to fall into the same error of again likening Judaism to a current philosophy. Indeed it is not my aim to bring parallels between the studies of logical theories of the Chicago school and the logic of the Talmudic schools of Hillel and Shamai. And yet if the historical method of merely bringing quotations did not prove to be fallacious, a greater number of Jewish sayings would fit into the system of pragmatism, than into Kantianism or Hegelianism.

Externally, both pragmatism and Judaism have this in common, namely, that since both permeate life in its entirety, we find traces of pragmatism as well as of Judaism in any system of philosophy. As in pragmatism, so also in Judaism, ethics makes no artificial abstraction between the outer action and the inner motive, but lays emphasis on the effect of the action on personal character. The action and the intention form one perfect whole, says Jehuda Halevi. Jewish ethics is guided not by a mere formal "ought," but by laws of conduct, which have for their aim the happiness as well as the perfection both of the individual and of society. The philosophy of Judiasm makes this earth the center of the universe, and sees no chasm between soul and body, beliefs and realities, theory and practise. It forms no definite sets of creeds and dogmas. It is based on evolution, progress, change, adaptation. In a word, it grasps life in its flowing dynamic aspect, where "the mountains spring like rams

and the hills like young sheep." If this philosophy is to be compared with anything outside of itself, it approaches, it seems to me, pragmatism rather than any other system. A full understanding of the interpretation of the law could make one see that even the Revelation was not taken as an absolute truth, as a pattern for all future generations, but that it was looked upon as something out of which the truths gradually evolve with the changing generations, as witness several Talmudic sayings that could be interpreted in this light.[8] The main ground, I think, which brought the ancient Rabbis to prohibit the putting into writing of the oral law, was their fear that it might become fixed and not sufficiently flexible to meet the changes created by the respective needs of the times. The medieval Jewish conception of religion seems also to substantiate my point, *e. g.*, the quotation which I have brought above that a religion can not be true unless it satisfies human needs.

As we have already seen, Jehuda Halevi's conception of religion is not far from that of James. Both found fault with the general philosophic conception of God, which is transcendental and does not sufficiently permeate life. Halevi criticizes, much in the same manner as James, the tendency of philosophers to live in an abstract world and not to reckon sufficiently with the real one. Like James, he accuses philosophy of laying too much emphasis on first things, principles, categories, and hence of bearing no fruit. He writes: "Do not be enticed by the wisdom of the Greeks which bears only fair blossoms, but no fruit." It is fruits, consequences, facts, values, which are of importance to Jehuda Halevi.

The contemporary Jewish philosopher Ahad Ha'am seems to me to approach very closely the pragmatic school. If the philosophic thoughts of his various writings were gathered into a system, it would be a form of pragmatism worked out independently along Hebrew lines. His writings are contemporaneous with the pragmatic movement or somewhat prior to it. His aim is not to create a new system of philosophy, but to put a new life into an old people, or rather to resuscitate the old life. His essays deal primarily not with philosophy proper, but with Jewish problems from a philosophical point of view. But his mode of approach, his method of analysis, his genetic interpretation of historical movements and traditions, his conception of morality, and his view of life in general and of Jewish life in particular, seem to me to be essentially pragmatic.

[8] In *Tractate Menahoth*, p. 29 b, there is a beautiful Midrashic passage which illustrates the relationship of the Torah of the time of Moses to that of later generations. The Torah has unfolded itself and developed to such an extent, that Moses could not recognize the traditions which Rabbi Akiba taught in Moses's name.

His essays *Positive and Negative* (1891) and *Two Masters* (1892) discuss the relation of new ideas to old ones, and the question of truth in the same vein as James. These essays, and particularly the one on *Imitation and Assimilation*, approach Professor Dewey's interpretation of the history of philosophy in his article on the *Significance of the Problem of Knowledge*. The essay *Past and Future* (1891) approaches somehow James's psychology of the I. The essay *Priest and Prophet* (1893) shows the existing conflicts in all aspects of life, and one could infer, I think, that if he tried to construct a theory of consciousness, it would not have been far from the pragmatic theory. In his essay *On Many Inventions* (1890), among other things, Ahad Ha'am, like James, reduces the ultimate causes of divergent beliefs to temperament. Some are ruled by imagination, he thinks, and others by reason. The first type corresponds to what James has called "tender-minded," and the second type to the "tough-minded." I have tried to point out these similarities not so much in order to bring out the pragmatic tendencies of Ahad Ha'am —this would require a more extensive study—but rather to show in another form the kinship between Judaism and pragmatism. For Ahad Ha'am seems to me to be one of the few in whom, as in Jehuda Halevi, the genius of Judaism as a national product, has found its fullest expression.

Finally, from a better understanding of Jewish philosophy we might get double tools, with which we could work backwards and forwards, see on the one hand what Judaism is, and on the other, distinguish in the course of its development what is genuinely Jewish and what is not. Several new conclusions would have to be drawn. They might not help to solve our problems, for all systems of philosophy have but an historical value. But what I have tried to show is not the value of Jewish philosophy, but its individual characteristics and its place in the philosophical paleontology.

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THE INTERESTS SERVED BY THE LAW AND THE METHODS OF THEIR EVALUATION[1]

REFLECTIVE thought on the nature of law has, in recent times, been increasingly concerned with the ends or interests served by the various legal institutions. So long as discussion took for granted some great supernatural or supersocial sanction of the law, some *one* eternally preordained end which the law was to serve,

[1] A statement of the problem to be discussed at the joint meeting of the Conference on Legal and Social Philosophy and the Western Philosophical Association, April 7, 1917.

e. g., the enforcement of Justice, the question of rights and duties appeared as the most fundamental problem. But with the increasing recognition that all human needs are as such worthy of satisfaction and that the proper function and limitation of the law is not to be answered on *a priori* principles, but on experimental evidence, the questions as to the extent of these needs, their relations to each other, and how their conflicting claims can be adjusted, press forward as the fundamental problems of the law. These problems may be approached from the sociological point of view through a general theory of social interests and an inquiry as to which of these can effectively be served by the law (Small and Bentley). Or they may be approached from a juristic point of view by an analysis of the actual needs which the law does serve (Demogue and Pound).

Leaving out of account the question of practical effectiveness, even a mere list of the human interests protected by legal means is a task of bewildering complexity. The law directly or indirectly protects a man's life, his health, his authority over his children, his reputation, his desire to travel, to keep his wife's affection, *etc.* It protects the prevailing standards of morality, standards of expenditure, honor, and humanitarian dispositions to the suffering and distressed. It is relatively easy to invent principles of division to classify all these needs, but rather difficult to be sure that we have not missed some of the most important interests. Thus, it is easy to group a number of interests under the caption, *economic,* and to regard such demands as that for equality in distribution as similar to the demand for greater income. But it may well be that the demand for greater equality is predominantly a development of jealousy, an impulse perhaps as primitive as the economic motive of acquisition. The distinction between means and ends is also a snare. Thus political reformers are inclined to look upon efficient administration as a means of saving money to the community. But it may well be that local pride and freedom from central control are also ends in themselves, well worth increased financial expense. Would the people of the United States be willing to give up their municipal and state governments if they were assured that the expense of government would thus be curtailed? There are intangible interests like the need for social discipline, individuality, or social unity such as is included in the term Americanization, which elude our attempts at classification and yet are potent factors in the life of the law.

The chief burden of our problem, however, is the question of how conflicting interests are to be adjusted. Enumeration and classification are useful so far as they help in this respect. The interests of labor and capital, of shippers and transporters, of social security and individual freedom, *etc.*, are always conflicting. We have also

the subtler conflicts, such as between the demand for increased population and the demand for higher standards of life, or the interest of increased production and the interest of improved consumption. No interest, not even the life of the individual citizen, can receive absolute protection, and in every case the question arises, how far should one interest be protected at the expense of another? In general it may be said that the great problem of the law is to determine the line between temporary and permanent interests, and to devise ways in which the former may be served without detriment to the latter. But this involves all the traditional philosophical problems of the commensurability of all values, the possibility of a hedonistic calculus, and the inescapable question as to the value of life.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Natural Order of Spirit. LUCIEN C. GRAVES. Boston: Sherman, French and Company. 1915. Pp. xiii + 365.

This new venture into the field of the occult will appeal to the religious-minded rather than the doubters. It aims to eliminate the supernatural from religious thought while keeping the critically evaluated content of the supernatural. Its thesis is that the universe is larger intensively than it seems; that, in fact, conscious existence extends beyond the limits of protoplasmic organization much as the ether waves do beyond the ends of the spectrum.

Empirical proof of this is offered in a series of alleged spiritual communications through a medium, most of which come ostensibly from the son of the author, a promising young law student accidentally killed in 1911. In this respect the book is to be compared with Sir Oliver Lodge's new work, *Raymond,* which the noted physicist makes up largely of messages believed to come from his son, Raymond, killed not long since in battle. An extended "psychic" interview with the late F. W. H. Myers is included, also; and this gives much the fullest account of present-day spiritistic philosophy. There is nothing in it, however, that transcends the possibilities of incarnate mind, nothing that might not be said by a representative of spiritualism in the present world, say, Mr. Myers when in the flesh.

Young Graves's communications assure us that the life beyond is a happy state, amidst external features which are non-material copies of the objects and institutions of the earth life. Aside from this information, as is usual in such cases, the nature of the other life—its conditions, occupations, aims, *etc.*—is left with extremely little content. It is to be said, however, that the spirit youth speaks with a masculine freshness, a free vigor and humor quite characteristic of "young America," which one finds very hard to attribute to any subliminal processes of the female "psychic." Reference being made, for example, to certain pictures of heaven in which saints with harps are represented as sitting on clouds, the dead Walter remarks: "I agree with Mark Twain that it would be very tiresome, and the chances are the music would be all out of tune." Then, his father being a clergyman, he adds: "Forgive me, Dad. I do not seek out the religious enthusiasts. I seek those who give me something to think of and something to do." A little later the son remarks: "You wait, Dad, till you come over here, and you shall have a library so big that it will take a thousand years to read it through." A year later this quite American spirit closes an interview with the words: "If there's anything you don't know, Pop, ask me."

In the main, the author's style is clear and interesting, and his

temper dispassionate. A break in both these respects occurs, however, when he comes to the subject of telepathy. The positivist attitude of deference to facts which he has maintained hitherto then falls away—melted off apparently by the *furor theologicus*—and he adopts the language of heated controversy, without pausing to make clear to the reader wherein the telepathic explanation is such a deadly foe to spiritism. It is characterized as a "subterfuge" and its outcome as a "fiendish deception," and the question is raised, "What is the end in view, what in the world is this strangely independent, all-prying, all-cunning subliminal aiming at? And why should Divine Wisdom first of all have endowed this substratum of our being with such fiendish powers of deceit, and of mockery of the tenderest and holiest hopes of humanity?" But about all the light thrown upon the issue is that conveyed in certain extracts from Dr. Hyslop and others, which, as quoted, have to be taken *ex cathedra*. The author in his strong opposition to this modern theory which now disputes the field of the occult with his own essentially ancient and primitive (but possibly true) one, fails to see that, be the shortcomings of the telepathic explanation what they may, it at least tries to obey the law of parsimony, and not multiply theoretical existences needlessly.

The critico-constructive part of the author's inquiry should be helpful, it would seem, to the ordinary religious believer by widening his mental horizons. Its intellectual point of view is that of intelligent evangelical belief, which theologically is nowadays more or less Neo-Platonic. Human perduration is assumed, and the task set is to show that personal survival is most conceivable and credible when viewed as a natural, and indeed evolutionary, process. Spirit is—as indeed, the religious imagination has generally assumed—not properly *im*material, but material on a higher plane, matter imperceptible to our present senses. He even endows spirit with weight, thus conceiving it as more strictly material than either electricity or ether. He insists that it is a truly "natural" conception, there being no breach of continuity between the world of spirit and that of sense. Spirit is but the final stage of ascending existence, the bloom and fruit of matter. He finds considerable evidential support in the phenomena of accommodation discovered by the biologist and in the physicist's facts of radioactivity and especially radiational "emanations." As so often with the amateur physicist, the mysterious luminiferous ether provides an analog of far-reaching and thrilling possibilities. At times he seems to identify the spirit world with an ethereal order of existence, forgetting that ether is weightless, and forgetting, also, that from the viewpoint of organization and consciousness the physicist's ether is on a lower plane (*i. e.*, simpler) than matter, and *a fortiori* below the grade and dignity of proto-

plasm. This fact does not forbid that ether should be the raw material of spiritual organisms, but it does require us to find the secret of such organisms (if they exist) in some unitary organizing factor, and not in the general properties with which the physicist endows it.

On the whole, the book may fairly be described as a thoughtful and earnest attempt to justify St. Paul's prophetic declaration that "if there is a natural body, there is also a spiritual body. . . . And as we have borne the image of the earthy, we shall also bear the image of the heavenly," and by means of the constructive imagination to articulate the content of that declaration into the actual framework of nature as physical science now discloses it.

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Rest Days: A Study in Early Law and Morality. HUTTON WEBSTER. New York: The Macmillan Company. 1916. Pp. 308.

Professor Webster has chosen a unique field and has made a notable contribution to sociological science. His study of rest days, as growing largely out of unlucky days when certain activities, or all of them, are taboo, is a searching investigation among all peoples and at all times.

The Sabbath originated, in all probability, as a taboo day at the new or full moon and the recognition of the four phases of that luminary gave the basis of the civil week. Babylonia furnishes the closest analogues for Judiasm, but they are not lacking elsewhere. Thus Herodotus (VI., 57) tells us that the Spartan kings on every new moon and seventh day of the (lunar) month, were given at public charge, each a full-grown victim in the temple of Apollo, a measure of barley, groats, and a Laconian quarter of wine.

The book contains a lasting contribution on primitive methods of reckoning time. These were, in almost every instance, based on a lunar calendar, usually in conjunction with a solar or seasonal one. As a study in the origin of festivals, unlucky days, and calendar systems its value can scarcely be overestimated.

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NOTES AND NEWS

JOHN E. RUSSELL

PROFESSOR JOHN E. RUSSELL, whose death occurred on February 25, had been professor of philosophy at Williams College since 1889. He was born in 1848, and graduated from Williams in 1872, after which he spent several years in preaching, study, and travel, finally accepting a position as instructor in Biblical theology in the Yale Divinity School, where he remained until called to Williams. His published writings include an edition of selections from Locke's *Essay,* an *Elementary Logic,* and a *First Book in Philosophy.* Besides writing these books he was a frequent contributor to various technical periodicals, having to his credit some twenty-five or thirty articles on questions of contemporary philosophical interest. Some of his best work appeared in this JOURNAL, notably his papers upon *Pragmatism,* including his controversies with Professor James and Dr. Schiller, which will be remembered by every one who followed the lively discussion between the pragmatists and their opponents some ten years ago. In spite of the fact that Professor Russell later on announced his own partial conversion to the doctrine, he must always be counted among the keenest and most dangerous critics that pragmatism ever had to face. Criticism, in fact, rather than con-

structive thought, was Professor Russell's most notable intellectual gift, and in subtle analysis of the weak points of a theory he had few equals. But to critical power should be added, in any estimate of his abilities and his work, an unusually sympathetic apprehension of all that was sound in his opponent's views, together with a loyalty to truth and a kind of intellectual chivalry that made him eager, in his exposition of a doctrine which he did not share, to do his opponent more than justice. His greatest delight as a thinker was to run to the rescue of some under-dog. It was this kindly yet pugnacious chivalry, joined with his loyalty to truth and his desire that his students should think for themselves that made him, in his teaching, rather the expositor than the advocate. His method was not without its fruits, and he could count among his former students many men who are prominent to-day in American philosophy and psychology. But to the great mass of his students it was his personality rather than his intellect that made appeal. And his personality was of so rare and sweet a nature that for the last twenty years he has probably had no living rival in the hearts of Williams undergraduates and alumni.

THE seventeenth annual meeting of the Western Philosophical Association will be held in Ann Arbor, Michigan, on April 6 and 7, in acceptance of invitation from the Department of Philosophy of the University of Michigan. The executive committee has felt it desirable to devote a part of the programme to issues of broad general interest. Arrangements have been made, therefore, for a symposium presenting the attitude of idealism, of pragmatism, and of realism to the following three questions: (1) In what sense does the human person possess independence of his physical organism and environment? (2) What reality has the history of the world as the physical and biological sciences present it? (3) Does any being exist that plays the part assigned to God in theistic religion? Arrangements are in progress for at least one joint session on April 7 with the Conference on Legal and Social Philosophy. The special topic will be "The Social Interests Protected by Law and how they can be Evaluated."

THE President of the American Philosophical Association, Professor A. W. Moore, wishes to announce that Professor W. T. Marvin, who was elected secretary-treasurer at the last meeting of the association, has declined to serve, owing to the pressure of other duties. President Moore announces further, that he has asked Professor E. G. Spaulding to act as secretary *pro tem.* and that Professor Spaulding has expressed his willingness to continue the duties of the office for the present, and, perhaps, for the remainder of this year.

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PURPOSING SELF *VERSUS* POTENT SOUL: A DISCUSSION OF PROFESSOR WARREN'S "STUDY OF PURPOSE"

THERE is ever-increasing need to distinguish between vitalism, a philosophical doctrine upheld by a strong minority of modern biologists, and self-psychology, the theory of those who believe that psychology studies not primarily mental processes or functions or modes of behavior, but a functioning, behaving self. The two doctrines are alike in their opposition to a mechanistic conception of psychology; but there the agreement ends. For the heart of vitalism is its metaphysical conception of a soul, or entelechy, which guides the organism in its growth and functioning, whereas self-psychology —which is science, not philosophy—deals with the experienced self to which it attributes neither freedom, nor a peculiar potency, nor guiding force. The belief that one has deprived psychology of the self when one has purged biology of the vitalist's entelechy, or soul, is responsible for the intrusion, from an opposite direction, of philosophy into psychology. An instance of this mechanistic metaphysic, confusing strictly psychological issues, I find in Professor Warren's notable "Study of Purpose."[1]

Dr. Warren analyzes conscious purpose into five main factors: (1) *"forethought,"* which may be concrete or symbolic, complete or syncopated (pp. 10 ff.); (2) *"assent,"* or "consciousness of intention, decision, or volition" which distinguishes purpose from mere imagination of the future (pp. 12 ff.); (3) *"potency feeling,"* which accompanies the assent only "in complex purposes which involve deliberation" (pp. 16 ff.); (4) *"the self-factor,"* usually implicit, shown to be present by the consideration that "the thought of an act is not purposive unless the thinker himself is concerned in accomplishing it" (pp. 21 ff); and (5) *"the sense of fitness and unfitness . . .* frequently associated with the perception of the completed situation" (pp. 22 ff.). It will be noted that the first, second, and fourth factors enumerated in this singularly adequate analysis of purpose—forethought, assent, and the self-factor—are, it is implied, always

[1] This JOURNAL, Vol. XIII., pp. 5 ff., 29 ff., 57 ff.

present, whereas potency-feeling and the sense of fitness are rightly described as occasionally or "frequently," not invariably, present.

In the face of this analysis it is surprising to find that Professor Warren reaches the conclusions that purpose is a mechanical category. The considerations on which he bases this doctrine are, in the main, the following:

1. He first virtually reduces the potency-feeling, assent, and the feeling of self, all three, to kinesthetic, sometimes supplemented by organic, sensations. "The self-factor may be traced," he says, "to kinesthetic elements" (p. 22[2]); "in the potency-feeling," he declares he discovers "no element but the kinesthetic data" (p. 20[3]); "if we analyze the assent-factor," he says, "we find that it consists of kinesthetic and organic data" (p. 13[3]).

It is, however, impossible to accept unquestioningly these conclusions. To begin with: the description of assent and self-feeling as mere sensational complexes tallies oddly with the actual terms in which Warren himself describes these experiences. Thus, he refers to assent as "our attitude" (p. 13[2]) and to the self-factor as the consciousness that "the individual himself is directly concerned in the outcome" (p. 9). But this is the language of self-psychology; and had Professor Warren eschewed these terms and described assent, potency-feeling, and the self-factor solely as complexes of sensation and affection he would certainly have failed to distinguish one from the other and to achieve his peculiarly illuminating and accurate account of purpose. The reduction of volition to sensational and affective elements is, furthermore, diametrically opposed not only to the incidental introspection of such psychologists as Dürr[2] and James,[3] but to the experimentally controlled observations of the subjects of Michotte and Prüm and of Ach. These observers constantly reported the consciousness of the assenting, willing *I*, or self, as an experience "totally different from" mere kinesthetic and organic sensation.[4]

2. Professor Warren's second reason for adopting the mechanical conception of purpose may perhaps be contrasted with the first as a biological, not a specifically psychological, consideration. He believes that two of the factors of purpose, as he has just described it—the anticipation and the adaptation—characterize the merely reflex responses of animal organisms and he concludes that human purpose should be classified as a sub-form of this anticipatory, but purely mechanical, behavior.

[2] *Die Lehre von der Aufmerksamkeit*, 1907, pp. 73 ff.

[3] *Principles of Psychology*, Vol. II., p. 569.

[4] *Cf.* Michotte et Prüm, "Étude Expérimentale sur le choix Volontaire," *Archives de Psychologie*, X., 1911, pp. 113 ff., esp. p. 192; N. Ach, *Über den Willensakt und das Temperament*, 1910, esp. pp. 240 ff.

It is important to understand precisely what Warren means by "anticipatory behavior," for this is the pivot of his theory. He describes it as response to a stimulus not yet present, involving "inversion" of the usual temporal order (pp. 30 ff.); and illustrates it by the reactions of a baby to the breast, of a chicken to a grain of corn, and of a raccoon to a maze. "When," he says, "a raccoon is placed in a familiar maze and starts to traverse it, his locomotor adjustments are in part a reaction to the subsequent taste stimuli of the food lying at the far end. . . . When a chicken pecks at a grain of corn it is starting the food-assimilating reaction before the food is touched. In the human infant the sucking act involves a chain of reflexes . . . not fully understood till we study the feeding behavior as a whole. . . . All these forms of behavior are anticipatory; they are reactions . . . before the stimulus is wholly present" (p. 33). An obvious infelicity in this theory is the fact that it is obliged to ignore, or to treat as "incidental accompaniments" (p. 71[2]), three of the five factors—assent, potency-feeling and the self-factor—which Warren, by his initial study, had attributed to the purposive consciousness. And, by Warren's own admission, it must conceive a fourth factor, adaptation, as at once a characteristic of the purposive activity of organisms (pp. 41 ff., 71 ff.) and yet as "*a judgment made by the scientist* and not a quality inherent in creatures and activities" (pp. 45[1], 62, 71 end). But the decisive objection to the theory is the fact that the mechanical animal reflexes which it conceives as anticipatory of reactions to future stimuli and, for this reason, inversions of the usual temporal order never are anticipatory except as supplemented by consciousness,—that of the actor or of the observer. Professor Warren's comparison of these reactions-to-future-stimuli to the "reflex mechanisms of distant receptors," to light and to olfactory stimuli is at best only an analogy; for, as mere mechanism, no organism can be conceived as reacting to future, that is, to as yet non-existing stimuli, so, when Warren says that the reactions of raccoon, chicken, and baby "have reference to," "find meaning in," future stimuli—his statements, though unquestionably correct, are no longer applicable to unconsciously reacting organisms. For only a self, never a mechanism, can "find meaning" or "anticipate." And the temporal order of reaction and food-getting is reversed not in any physical way, but only in somebody's consciousness. Thus, anticipatoriness no less than adaptation is shown to be a psychical, not a mechanical, category; and the conception of human purpose as a form of mechanical behavior is herewith discredited.

But though Professor Warren is, in the opinion of the present writer, unsuccessful and even inconsistent in his doctrine of anticipatory behavior, he abundantly makes good his case against vitalism.

He rightly insists that the unprejudiced introspecter finds no trace, in the experience of purpose, of a "directing entelechy" (p. 36[2]) or of a "dynamic initiator" (p. 48). Against every effort of vitalistic metaphysics to ground itself on psychological observation he spiritedly and rightly protests. In particular, he insists (p. 20[3]) that the "feeling of potency" does not assure the achievement of a purpose and does not argue for freedom of will. To be sure, he seems curiously unaware that a mechanistic as well as a vitalistic metaphysic is out of place in psychology; but he is still amply justified in his protest against "the extension of such notions as indeterminism and compulsion to the sphere of biological processes." We are concerned, however, at the end as at the beginning, to point out that this banishment of the vitalist's soul, or entelechy, leaves intact the experiencing self which Professor Warren's own analysis of purpose has so clearly disclosed.

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WELLESLEY COLLEGE.

SOCIETIES

THE SIXTEENTH ANNUAL MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION[1]

THE sixteenth annual meeting of the American Philosophical Association was held in New York City, Wednesday and Thursday, December 27 and 28, in acceptance of the invitation of Columbia University. This act of courtesy on the part of Columbia University was appreciated by the members of the association, especially because the holding of the meeting in New York City afforded a welcome opportunity to its members to attend some of the sessions of the American Psychological Association and of the various other learned societies assembled in the city during Christmas week. The interest in the celebration of the Psychological Association was particularly keen. However, these opportunities had the effect of decreasing in some measure the attendance upon the sessions of the Philosophical Association and led to the curtailment of the meeting. The meager audience assembled when the first session was called to order by Presi-

[1] The writer of this report wishes to acknowledge his obligations to Mr. Herbert Schneider, fellow in philosophy in Columbia University, for the assistance in the preparation of this report afforded by his notes on the meeting. These notes were taken at the writer's request. Without Mr. Schneider's help, even so fragmentary an account as this could hardly have been given; for the speed at which some of the papers were read, made the taking of notes difficult, and the lack of abstracts in the case of other papers rendered necessary the taking of rather full notes.

dent Lovejoy was somewhat discouraging; happily, the audience was considerably augmented during the morning, and attendance upon subsequent sessions was fairly large. The executive committee had left to the will of the association the decision as to whether there should be a session on Thursday afternoon, or on Friday morning, or at neither time. The assembly voted to dispense with meetings after that of Thursday morning. This unfortunately deprived the association of all opportunity to hear the papers offered by Mr. Norbert Wiener ("A Criticism of Kant's Transcendental Esthetics") and Mr. Warbeke ("Mr. Schiller and Gorgias").

The executive committee deserves the gratitude of the association for the extreme care displayed in its preparation of the preliminary announcement of the topic for discussion, and in the effort expended in seeking an explicit definition and formulation of the problems involved. The committee's formulation of the topic is as follows: "(*A*) Is the division of the entities present or involved in experience into two reciprocally exclusive classes of 'mental' (or 'psychical') and 'physical' to be retained? (*B*) If so, how is the distinction to be formulated? In particular, what is the essential differentia of the class 'mental' or 'psychical'? Are the entities denoted by its attributes, 'aspects' or relations of things which at the same time may possess the predicate 'physical'; or are they a class of existing things which can never possess the attribute 'physical'? What, specifically, are the entities denoted by the term 'mental'? And how, if at all, is their existence to be established?"[2]

Concerning the timeliness of the committee's selection of the subject for discussion there can hardly be any question. The purposes of the committee were threefold. As stated in its announcement, "the matter of chief moment in the discussion . . . is, of course, not what entities (real or imaginary) can most suitably be called 'mental' or 'psychical,' but whether certain asserted entities, which (suitably or otherwise) *have* been so called, exist and are to be recognized by metaphysics and by psychology."[3] Secondly, as a subsidiary purpose, "to do something to decrease the prevalent diversity and confusion in the use of the terms 'mental' and 'physical.'"[4] And, finally, to make some progress towards the attainment of an acceptable definition of the terms "mental" and "psychical."[5] It will be granted that even a partial fulfilment of any of these purposes would serve as abundant justification for the labors of the committee and

[2] This JOURNAL, Vol. XIII., p. 573. For the committee's notes on the questions quoted, its enumeration of certain current views relating to the questions, and for its annotations concerning subsidiary questions, bibliography, *etc.*, see the preliminary announcement in the issue of this JOURNAL just referred to.

[3] *Ibid.*, p. 577.

[4] *Ibid.*, p. 576.

[5] *Ibid.*, p. 578.

of the leaders of the discussion, and would prove that the assemblage of the association had borne fruit. Whether, and to what degree, such desirable results obtained, it is impossible to estimate. The quick interest manifested by the participants makes evident the stimulating influence of the meeting, and the fruits of this incentive will doubtless be appreciable in the progress of reflection upon a topic so widely recognized as of momentous and present concern.

The committee is certainly not at fault if its labors were not crowned with that convergence of the discussion upon the same issues and that focusing of interest and inquiry upon the same or closely related topics for which it planned. The committee had expected that abstracts of the papers to be presented by the leaders of the discussion would be circulated among those leaders, so that some measure of inter-adjustment and articulation of the positions maintained might be secured before the presentation of the papers. Owing to insufficiency of time, this plan miscarried. The papers of the leaders of discussion were also to be published before the meeting, but this too was not carried out. The results were that the positions expounded by the leaders started from different bases, were addressed to different issues, and the underlying similarity of interest and the nuclei of agreement and precise points of disagreement were obscured. Besides, the committee was unable to determine the logical order in which the papers should be read—a matter of comparative unimportance, however, after the failure of its other plans. Such being the situation, it became the task of the meeting to disclose whatever unanimity of purpose and identity of idea existed, and to secure the focalization of the lines of thought, instead of taking its departure from whatever common fund of agreement concerning issues, methods of approach, and delimitations of subject that might have been attained beforehand by a favorable outcome of the committee's designs. It may be said, therefore, with some truth, that the meeting closed at the point at which the discussion might conceivably have opened. The breadth of the topic was recognized beforehand, and to some extent the situation that arose was anticipated. Yet something would undoubtedly have been gained in the way of clarified issues had the scheme adopted been carried out. The experience of this meeting, therefore, should indicate that an earlier announcement of the topic of discussion, coupled with the circulation of abstracts prior to the meeting, would render more effective the meetings of the association.

The first paper presented to the assembly was that of Professor I. W. Riley, entitled "French Philosophy in America." Following Comte, Professor Riley divided the course of this influence into three stages. First, the theological stage, which might be characterized as

the stage of puritanism. At this point the French influences led to a negative reaction, for French deism and naturalism were an abomination to the puritan temper. These impulses, however, had a destructive effect, and in this the power of Voltaire was prominent. Second, the metaphysical stage, in which naturalism, as represented by Voltaire, and eclecticism, as represented by Cousin, were effective. The third stage is the positivistic, marked by the influence of Comte. Naturalism was opposed to the traditional and dogmatic elements, and the reaction against these, largely incited by naturalism, led to transcendentalism. The foreign stimuli toward transcendentalism did not come directly from Germany, but indirectly, through England, and more particularly through Coleridge. Eclecticism was attractive to the transcendentalists partly because of their opposition to systematization in philosophy, and French eclecticism was approved in so far as it was vague rather than in so far as it was precise. The clarity of style of eclectic writings, and the confidence expressed by eclecticism in the impulses of instinct, were appreciated. Professors Henry and Ripley translated and expounded Cousin, and Henry, in particular, defended Cousin against the charge of misinterpreting Locke. The Boston Unitarians and the Princeton Presbyterians alike levelled their attacks upon electicism as the latest form of infidelity. In response to Professor Lovejoy's question as to the relative influence of the *Dictionary* and the *Encyclopedia* upon American thought, Professor Riley stated that the former was the popular work, the other being alluded to rather scantily. Professor Riley went on to call to notice the part played by Jefferson as mediator in the transmission of Gallic thought. De Tracy's *Elements of Political Economy* was translated at his suggestion and Jefferson himself contributed the preface to the translation.

In the absence of Professor Norman Wilde, the president called upon Professor Woodbridge to read his paper on "Structure." Professor Woodbridge stated the question: What is meant by the structure of things? and asserted that one's philosophical preferences were irrelevant to the study of the question. The problem is to discover a structural principle to which every solution of the problems involved must conform. Illustrations from a number of fields were cited. In mathematics, the structural principle is determined by limits, by *maxima*, and *minima*. In mechanics, which deals with the limiting principles of the structure of bodies, we find that the whole of the science is the setting forth of those limiting principles to which all cases of displacement and equilibrium must conform. Whatever bodies may be called—congeries of sensations, or whatever one's philosophical predilections demand—we find always structure and structural principles. Chemistry is a kind of mechanics, expound-

ing the displacement of bodies in terms of the combination of elements, although a time element is essential in chemistry in a way not found in mechanics, for in the former time seems to be a real factor in structure. This suggests that structural conceptions are not always a matter of space alone. In biology this point is still more evident, for while biological structure involves that of mechanics and chemistry, there is superadded the structure of growth; and of growth, duration is characteristic. Life-histories are genuine temporal structures. The distinction between the vital and the mental, the speaker suggested, may be established in terms of structure. The structure of thought differentiates the living and the mental, while it is the business of logical science to express the limits of structure; this expression requires formulæ peculiar to this science. The syllogism may be instanced as an example of logical structure.

What are the implications of this consideration of structure? First, structure is a genuine discovery—it is not an hypothesis, a mere aid to thinking, nor does it have a sure status as a preliminary to thinking or discovery. Historically, and for the individual, it seems more natural to take things as structureless, chaotic, irregular. Structure, historically, is the discovery of order in the flux. Secondly, the discovery of structure is a final satisfaction to inquiry—for to understand the structure of the world would mean its satisfactory explanation. With complete knowledge of structure, science would come to an end. Thirdly, the consummation of the task of science would not mean the cessation of effort and consequent stagnation; for while knowledge would become dogmatic, art would become free, and invention the business of life. Fourthly, no dualism or inflexible distinction between the world and its structure is to be tolerated. The world does not *have* structure, it *is* structure. This leads to the fifth point, for if substance and structure be taken as identical, the question is pertinent: What are the attributes of structure? The primary attribute is inertia. It is a limiting principle of operations; it is not a force, but that which is illustrated and revealed in the "going-on" of things. Structure and matter are one and the same. It is difficult to think of matter in terms of its concrete kinds: if elements are transmutable, none is primary, yet all obey the principles of structure.

Professor Woodbridge's paper elicited a rather unusual degree of sympathy and assent, and it held the mind of the meeting as shown by references to it in subsequent discussion. Professor Spaulding raised several questions: In terms of what is structure expressed? What are the ultimate terms of structure? Isn't the structural point of view the same thing as the relational point of view? What is the relation between structures? May we not study the structure of the

discovery situation? To these queries, Professor Montague added three: What is the likeness or difference of meaning between structure, invariant, law, and function? Is structure an aspect of law? Or is law a species of structure? Professor Urban wanted to know whether, after the discovery of structure is complete, the remaining field is not that of appreciation. Professor Brown asked whether structure were the static or the changeless, and further inquired concerning the relation of structure to the absolute, asking whether the structure of structures is the absolute. Professor Overstreet desired to know the place the world of creation and appreciation is to have in structure. Professor Riley wanted to know how the inertia of structures is to be explained in a merely negative way. Finally, Professor Lovejoy asked about the antithesis of structure, in particular inquiring whether agency, form, activity, or the constructed could be taken as the opposite.

To this flood of questions Professor Woodbridge replied briefly. The thesis concerning structure was not thought of in terms of a negative antithesis. The fact of structure is so aggressive, however, that it seems there must be something to be given structure. In so far as he had any negative, said Professor Woodbridge, it is agency or activity as proposed by Professor Lovejoy. The fact of structure itself needs no explanation. As for the terms in which structure is to be expressed, the answer is, only in terms of structure, that is, in terms of the concrete structural problem. The problem of the relation of structures is a concrete structural problem. The relation of structure to unvarying law is extremely close, for the laws of nature are structural formulæ. Inertia expresses the fact that structure can not be changed, though one can be substituted for another. As for the relation of structure to the absolute, Professor Woodbridge averred that structure is what the philosophers ought to mean by the absolute, although such an absolute stripped of its emotional qualities. The consideration of structure leads to the absolute in the only sense in which such a conception is legitimate—as that without which things can neither be nor be conceived. The world of appreciation is not grounded in the nature of things, but is a way of transforming the world—the world of art is a definite kind of performance, but has no place in structure. It is not explanatory, but is the gift of the free imagination.

Professor Boodin followed Professor Woodbridge with a paper on "Social Systems." Three questions represented the direction of inquiry in the paper: Are there social facts? Do these conform to the postulates implied in systems? Do they fit in with the closed systems of the past? And also what is the promise in the way of generalizations in social systems? The speaker noted two false traditions

in connection with his inquiry—physiological materialism, which leads to solipsism, and juristic formalism, which is the result of extreme intellectualism. Social facts are relations of a unique kind. The social whole and social facts are different qualitatively from individuals and the material components of society. The factors in a social situation are the presence of more than one mind and the existence of a social tradition. Social facts present three salient characteristics: variableness, recurrence, and form. The primary variables are human individuals, capacities, and habits. The secondary are the type of group life, epoch, folk-ways, and the like. Social facts possess persistent traits that render prediction possible. By form is signified that attribute of facts which makes them statable in definite laws. Social laws are not laws of physical equilibrium. A number of empirical laws can be stated, though not with exactitude. Among such generalizations are the law of relativity of values, the law of least action (the tendency to economy in social behavior), the law of rhythm or of periodicities in social life, and the laws of accumulation or conservation. The existence of these laws, even in inexact form, gives assurance that a science of social systems is possible.

In criticism of this paper, Professor Cox insisted that social laws should be relinquished to their own fields, and that social facts should not be investigated in terms of philosophical or mathematical categories. Furthermore, a distinction between social science and social reforms must be adhered to, and social science should not be undertaken with the intention of edification. Professor Pratt urged the point that the laws of society are either merely laws borrowed from other sciences, or else the laws of society are not laws at all. The borrowing of the laws from other fields engenders the following dilemma: either the laws are exact and untrue, or else they are true and inexact. The query is pertinent: can the laws of society be stated in a form exact enough to be of any use? Professor Brown wished to know whether recurrence represents a principle of equal rank with principle of variability and form, or whether it is subordinate to, and a consequence of, the latter.

In reply Professor Boodin stated that following Whitehead he took recurrence to mean that the phenomenon could occur over and over. The three characteristics he had emphasized would apply to all systems—we must have variables, they must recur, and they must be organized. Furthermore, the laws of society, such as Tarde's laws of imitation, are not more abstract than Newton's laws.

Following this discussion, the president found time for the reading of Professor Crooks's paper: "Does the Absolute Idealism of Royce Constitute a Theology?" Royce's doctrine of the deity is a definitely and systematically worked out doctrine of God such as is

essential to a theology. The rationalistic Royce considers the concept of God, and here the argument is the Anselmic ontological argument. The principle of proof is that the possibility of error implies reality. Royce later advances to the statement that God is a person. In the *World and the Individual* a form of monistic idealism is presented that seeks to guarantee the individuality both of the absolute and of man. The *Supplementary Essay* attempts to prove first, that the absolute is the person of all persons, and secondly, that the absolute is just such a person as to admit within its infinitude other infinite series, *e. g.*, human purposes, or personalities, made complete. In order to attain eternal life, a pious attitude toward the one must be assumed, and the one gathers up within itself the fragmentary purposes of the many and gives them fulfilment. In winning infinitude, the individual wins complete individuality. All reality is completed personality, and hence the doctrine tends toward pantheism. But with the assertion that the absolute is a person, we find a new type of pantheism. The solution to the problem of evil is found in the negative, finite, fragmentary character of evil. The pillars of any true religion according to Royce are the ancient doctrines of incarnation and vicarious sacrifice. The nucleus of Royce's doctrine of vicarious atonement lies in the thought that only by suffering when we are not guilty are we able to comprehend evil and to glimpse the whole. The approach to these doctrines is rationalistic, but it is also voluntaristic, and finds a place even for emotion. Religion is social, and the "beloved community" is the form in which the absolute expresses himself. Royce's doctrine is fitted to serve as the basis of a systematic theology.

After the reading of this paper the meeting adjourned. The afternoon session was devoted to the presentation of papers on the topic of discussion and to general discussion. The president explained beforehand the failure of the committee's plans, which was referred to above.

Professor Cohen was requested to present the first contribution. A lengthy syllabus prepared by Professor Cohen was distributed. In this syllabus were outlined the idealistic, materialistic, and dualistic positions on the subject. Professor Cohen began his remarks by pointing out that nobody thinks of the mental and physical as identical. The question is how they are to be distinguished. There is no presumption in favor of mutual exclusiveness. The "idealistic" position that all is mental is to be rejected on the grounds that it involves an infinite regress and that it "supplies no differentiation for 'inner' or mental life." Materialism with its assertion that all is physical, the mental being a part thereof, gives occasion for the same logical objection. For if everything is matter, matter becomes a negative

class; and the "science of physics is impossible if we can not exclude certain entities as not genuine physical terms, *e. g.*, beliefs."

The arguments for the dualistic position that the mental and the physical are mutually exclusive were considered in some detail. The distinction between primary and secondary qualities is not fundamental, and furthermore, now that modern science has found that qualities obey mathematical laws, the motive for the subjectivation of secondary qualities is gone. The prime difficulty with exclusive dualism resides in the conclusion which follows, namely, that if my ideas copy things, then I must know the things themselves of which I have copies, and there is a duplication of the object known. The cleavage between the originals and the copies can not be retained.

Professor Cohen then outlined the position of neutral monism. The mental and the physical are "overlapping selections of neutral qualities such as logical relations"; each series is "defined by its fundamental postulates." Neutral monism was distinguished from phenomenalism and sensationalism; the objects known by physics may have no sense-qualities, but may lead to sense-qualities, or turn out to be sense-qualities. "Hypothetical entities (atoms, electrons, . . .) as objects of scientific judgment are as much entitled to physical existence as sense-qualities." To the question: when and where do these neutrals exist if not in mind or in physical body? the following answer is given in the syllabus: "A thing exists if it occupies a position in a given series. Neutral logical entities exist as parts of the mental and physical series, but also exist in the sense in which roots of equations exist, or in the sense in which the total universe of mind and body exists."

Professor Montague remarked that Professor Cohen had been unfair to the epistemological dualist in the following statement (from the syllabus): "The difference between the time of perception and the time of the existence of the object can be and is known. Hence, self-refuting character of the assumption that the object can be known only as existing at the time of perception." The critic insisted that the real point is the independent variation of the object perceived and objects known thereby. The perceived series of objects vary with the organism's condition, while the inferred object differs therefrom—hence the epistemological dualist claims a numerical difference. Professor Cohen responded to this criticism by denying that they are independent variables.

The assembly then heard Professor Bode's paper on the "Meaning of the Psychical." Professor Bode asserted that the problem is one of differentiating between conscious and unconscious behavior. We have two alternatives: First, we may point out the features that characterize conscious behavior by assigning to this behavior a quality

that makes it differ from other behavior; or secondly, we may appeal to the specific objects or situations that call it forth. Adopting the behavioristic standpoint, we may say that the organization of complex modes of response characterizes conscious behavior. It involves action controlled by an end, flexibility of organization, and the representation in the present of the possible consequences of acts. All consciousness is dependent on conflicting impulses. The object controls behavior by bodying forth results of activities which are still in abeyance. By conscious control is meant a search for new stimulations or a transformation of the present situation. There arises, therefore, a contrast between the certain and the uncertain, and this is the root of the distinction between the mental and the physical.

Professor Henderson criticized this position by declaring that he could not understand how consciousness could be defined in terms of behavior—as a form of behavior. Pragmatically, consciousness appears as activity furthering adaptation. But consciousness is something more than behavior; it is worth something in itself, it has independent value and ends apart from the adaptation of the organism.

Professor Hoernlé, whose paper was next called for, explained that the point of view from which his paper was written is conveyed by the title: "Confessions of an Old Idealist." He deprecated the effort to devise a generally acceptable terminology—the hope for such agreement is vain, and it is not desirable. Diversity of vision is the essence of philosophy, and there is no place for unanimity in philosophy. To the question: is the division of entities into two mutually exclusive groups desirable? must be appended this further question: in what context? The distinction is not helpful to science, but is important for philosophy. We should define the various points of view which yield the diverse meanings of the terms. What is the distinctively philosophical context from which the distinction should be drawn? The answer is metaphysics (including epistemology). Metaphysics must leave a free hand for science: but with similar restraint, the scientist must permit the metaphysician to handle scientific concepts as he pleases. The Cartesian dualism is inadmissible in the context of the natural sciences; nor can we admit in the context of metaphysics any distinction which depends on the science of energetics. We need a theory which will present the context in which the contrast of the mental and the physical is to be recognized as relevant and just. Professor Hoernlé went on to state briefly the position of Alexander (who rejects the dualistic structure), and of Russell (to whom the physical thing and the physical world are logical constructions), concluding that the mental and the physical may fall apart, but any element of the one may occur in the other.

Professor Warner Fite followed Professor Hoernlé. He stated

that he wished to proceed from the standpoint of the agent, the problem being to answer the question: how may consciousness be established? Where is consciousness? Not in anything specifically mental, for there are no peculiarly mental entities, and there is no series of inner experiences distinct from the series of outer experiences. All consciousness is in varying degrees consciousness of an object. The question: where is consciousness? should be supplanted by this: where is it *not*? The consciousness of an object will be found in the meaning of an object, and for the agent the meaning of the object is not separable from the object. Only for the observer does meaning leave the object unaltered. Meaning is personal, and objects can not be wholly depersonalized. Every object has a history. The peculiarity of the conscious side of things is expressed by familiarity and intelligibility. Contrariwise, every object has a strangeness and opacity, and these mark the limits of consciousness. So far, accordingly, as the world is familiar and intelligible, there we find consciousness. Consciousness is in the things that we know, really in the world. It is not a casual relation between entities. Where is consciousness? Where is it *not*?

At this point the meeting was adjourned. Before closing, President Lovejoy expressed the hope that the discussion of the following morning would militate towards a clearer definition of the issues and an explication of the relations between the various standpoints that had been expounded.

In accordance with the wish of the president, at the opening of the session of Thursday morning, Professor Pratt sought to coordinate the different strands of thought by giving a brief review of the positions of Professors Cohen, Bode, and Hoernlé. Thereupon the speaker, whose paper bore the title "Confessions of an Old Realist," proceeded to defend the dualistic view. Consciousness and the world of objects in space are entirely different in kind. There is a real space and consciousness is not in it. The dualist has no *a priori* doctrine about consciousness or nature. The dualism of consciousness and the external world is the simplest and most natural explanation. To make the subjective and objective continuous, as does Hollingworth, does not touch the distinction between the physical and the psychical, but only a distinction within the psychical.

Following this speaker, Mrs. Grace A. de Laguna read a paper on "The Limits of the Physical." We must distinguish between epistemological dualism and ontological dualism; they do not imply each other. The object of knowledge is not to be identified with the physical. The classic formulations of dualism were due to the discovery of physical uniformities, and the concept of the mental is a precipitate out of the practise of viewing physical uniformities as

universal. We all tacitly believe that there are limits to explanation by physical science. The limit of the physical is not the psychical, but the irrelevance of physical data, of physical uniformities. The apparent antinomy that arises, namely, that it is impossible to admit that the mechanical description is complete, while it is at the same time seemingly impossible not to admit it, is negligible when we consider that because a given event is describable in physical terms, it does not follow that the class of such events can be so described. Physical science can exhaust by analysis a given event only in so far as it can be construed as a particular case of a universal principle; but the concrete particular event is not completely described when taken as such a case. The limits of physical description are set by the intelligibility of the application of physical principles. The problem of the relation of the physical and the psychical is not an ontological problem. The genuine question is: Is the behavior of a living organism, especially one with a nervous system, describable in terms of physical science?

Professor Urban then spoke on the subject "Meaning in Modern Psychology and the Problem of the Existence of the Psychical." Meanings may be divided into three classes: (1) objective, which are as objective as objects and propositions, and are subsistent rather than existent, although non-mental; (2) quasi-subjective; and (3) subjective. The latter kinds do not exist independently of the organism and imply the psychical. In the sense in which existence is defined by the committee,[6] quasi-subjective and subjective meanings are existents. Subjective meanings are characterized by being directed on something—and this defines the psychical. The psychical entity is one, the assumption of the existence of which is necessitated by the relation "meaning-of," when the substitution of either physical or neutral entities renders the context unintelligible. "An Unlisted Definition of the Psychical" was the title of Professor Durant Drake's paper. Professor Drake explained his position as realistic epistemological dualist, and as an ontological monist. Sense-qualities are of just the same nature as the rest of reality; they are not identical with causal agencies, but there is a one-one relation between them. Sense-qualities are effects produced in us, and are not in objects. To the objection that this renders knowledge of the external world impossible, the reply is that the one-one correspondence gives us a formal knowledge of the external world, though not of its quality. Consciousness is a set of qualia, each existing in its own point of time, but bound together through the influence of a nervous system. The outer world is potentially consciousness, and the mental means this organization of qualia in a space-time order.

[6] *Ibid.*, p. 574, note 3.

Professor Hartman presented a paper entitled "A Definition of Dualistic Entities." Various uses of the term "consciousness" were examined by the reader; the equation of the term with energy, or a type of situation, or hesitancy and discrepancy, or to relation, was felt to be inadequate. Consciousness, if it is a type of relation, is a type so unique as to be unresolvable into the physical. Ultimate existence is heterogeneous, pluralistic. Whenever we apply the term "thing," we refer to heterogeneity, independence, and unity. An entity is, therefore, defined more ultimately by causation than by quality.

As the programme of papers was now completed, the topic was thrown open to general discussion. President Lovejoy urged that the meeting address itself to the task of securing a logical correlation of the points made in the papers.

Miss Calkins agreed that meaning defines a class of objects neither physical nor psychical, but deplored the vagueness of the term as used by Professor Urban. The term is used in a mischievously large sense. Further, in speaking of the psychical, the terms "color," "sound," and the like ought not be used, but "seeing," "hearing," and similar forms. The essence of meaning is personal relation, to be defined in terms of the self.

Professor Boodin, rejecting dualism, took the position that mental processes are a type of activity-system, but it is only one type of many, and is not to be opposed to the physical. Another speaker suggested that a definition of the physical might be derived by identifying the physical with the mechanical, that is, with the portion of phenomena suffering from a dissipation of energy.

Professor Montague regretted the commingling of epistemological questions with those concerning the difference of the psychical and the physical. The difference would come up as a problem for any epistemological position. The problem consists in discovering how the experience of the past and anticipatory experience of the future, which seem to differentiate the psychical, can be fitted into a physical series. Professor Overstreet endorsed Professor Woodbridge's endeavor to free our thinking from the shackles of old connotations. The conflict of opinion comes largely from the attempt to crowd the world into the restrictions imposed by such atavisms. If we approach the world as a pluralism of structures we have a more fruitful method of approach.

There followed the concluding remarks of the leaders of the discussion. Professor Cohen explained that his attack was on the reciprocally exclusive character of the physical and the psychical. The physical is for him the object of physical science, the psychical the object of psychology. The existence of knowledge is an insuperable objection to mutual exclusiveness. Physics deals with a certain selec-

tion of materials and is a method of handling it. The method is not universally useful. All facts having a mathematical structure constitute an objection to such a dualism. With reference to Professor Pratt's position, he denied that absolute dualism is either simple or natural.

Professor Hoernlé found himself largely in agreement with Professors Cohen and Overstreet. Professor Pratt could not find that Mrs. de Laguna had left any room for purpose and meaning. If the physical is not limited by the psychical, have the sciences which deal with the psychical any genuine subject-matter? Professor Pratt seemed to maintain a more flexible distinction at this point than his paper had indicated, for he admitted the possibility of a third kind of entity, and asserted that dualism is not a final description of the universe, but represents one of the most important distinctions that can be made.

At this point the presiding officer requested Professor Creighton to speak. Professor Creighton in a few happy words expressed his belief that the outcome of the discussion emphasized the need of cooperation in philosophic pursuits. What we need, he averred, is not common definitions: the division and subdivisions in the formulation of questions are rather a limitation than a help. Philosophy is a criticism of categories, of points of view and the relations of points of view. "Entities," "existents," and the like appealed to him as "little absolutes"; and the critics of absolutism seem always to fall back upon such lesser absolutes. These lesser absolutes, however, are but categories by means of which we interpret experience, and sooner or later must lose their acclaimed position as absolute entities in the chastening process of criticism.

The presidential address, "On the Conditions of Progress in Philosophical Inquiry," was delivered at the dinner of the association, which was held at the Hotel Brevoort, on Wednesday evening. After paying a fitting tribute to Josiah Royce, President Lovejoy discussed certain of the ailments of philosophical inquiry and suggested remedies for these distempers. He described first of all the phenomenon of "speculative fashions." Philosophical speculation seems not to result in a "settling of questions," but in recurrent revivals of old ideas and in a rhythm of fashionable opinions rather than in progress in knowledge. There are some thinkers who would even accept these divergences of opinion as final, and reduce philosophizing to a "sporting interest," using as an apology the differences among scientists. This, thought the president, is poor solace, for theoretical controversy is only satisfying when used for persuasion and not merely for sport, and argument is designed to lead to the establishment of scientific truths. This attaining of scientific truths

by philosophers is impeded by the fact that the philosopher is, as a rule, only half inquirer and half edifier. But the edification function of the philosopher is waning, and more trust is being placed in the cogency of truth itself. This cogency is, however, difficult to measure statistically, and actuarial methods of measuring the probable error in philosophies is elusive.

Hence it is necessary to inquire into the generic causes of error in philosophizing. Of these Professor Lovejoy discussed four: (1) Error is caused by the lack of the inductive observer's habit of mind. Too much philosophizing starts with an "inspiration and illumination" process, instead of from an observation of the conditions which are pertinent to the problem. There is need of an observational technique if we wish to get anything more than a "mob of private convictions." (2) Error results from the failure to make an exhaustive enumeration of pertinent instances; (3) next, from the lack of cooperative inquiry and the complementary and correcting action of other minds; (4) also, from the failure to isolate the problem successfully. Too many philosophical problems are discussed only by bringing in a whole philosophical system; and to prevent this the development of hypothetical reasoning and a method of isolation are essential. A catalogue *raisonné* of considerations, a philosophical map, is much needed, if philosophical inquiry is to make conscious progress.

After the presidential address, Mr. Woodbridge paid a tribute to Professor Creighton in his capacity as editor of the *Philosophical Review,* which is celebrating its twenty-fifth anniversary. He called attention to the great rôle which this periodical has played in crystallizing philosophical discussion and in promoting philosophical inquiry in America.

At the business meeting of the association on Thursday morning, Professor A. W. Moore was elected president of the association, and Professors Schmidt and Wilde were placed on the committee, taking the places vacated by Professor Cohen and Urban.

The observation has already been made that the meeting of the association did not attain such a degree of successful organization and articulation of the themes of discussion as would have precipitated out of the confusion of opinions some points of general acceptation or clear-cut issues. The cursory sketch of the proceedings that has been given will indicate this. Perhaps one might resignedly opine that all efforts toward such results were foredoomed to failure because of the breadth of the topic and the inevitable outcropping of so many diversities in philosophic faiths. While comfort might be derived from the thought of Professor Hoernlé, the address of the president is apt to chill one's complacent reliance upon this source of reassurance. However this may be, it is but natural to hope that the

future plans of the committee may be crowned with success, and that the circulation of abstracts, the publication of papers prior to the meeting, and similar expedients may be resorted to. It is hardly doubtful that the value of the annual conference will be thereby enhanced. There is one precaution, at least, that may easily be taken; namely, that all who present papers endeavor so to limit their length that they can be read within the time assigned at a comfortable pace—comfortable for both reader and auditor. Some of the misapprehensions and failures to perceive the course of the argument which continually occur are the results of reeling off a twenty-five or thirty-minute paper at a twenty-minute speed. Furthermore, it occasionally happens that the reader is compelled to omit sections of his paper because of the time-limits, or time is called before the paper is finished; this frequently produces such apparent discontinuities that the sequence of ideas escapes comprehension.

The temper of the meeting indicated in a stimulating way that the dualism of the physical and the psychical, or other supposedly clear and ready-to-hand distinctions between two kinds of entities, are no longer to be taken as given, or obvious, or natural. The ancient division of entities into two mutually exclusive classes has subtly influenced philosophical and psychological theory in many ways, most of them being unwarranted in fact or theory. It was evident that there is a general awakening to the situation, and that this is accompanied by a determination to clarify it by bringing to the surface the problems actually involved. This division of entities has sometimes been almost an unquestioned dogma, and has governed the course of inquiry in hieratic fashion. Or as an unattended, widely diffused tradition it has subtly impregnated the very terms of discourse, so that it is difficult to use certain terms without connoting the dualistic position and virtually admitting it. It has affected in devious ways the philosopher's vision of his subject-matter and operated so as to prejudice really unrelated issues; the division of entities has been influential especially where no cognizance was taken of it. There seemed to be a fairly unanimous opinion in the assemblage that the division has actually been rooted in the general philosophical tradition rather than generated through an examination of experience. Indeed, that it had often guided the study of experience rather than resulted from it. The attitude of those in attendance, in so far as there was a common attitude, seemed to be that debate concerning the nature of the "mental" and its relation to the "physical" was bootless until the grounds in justification of the cleavage between the kinds of data of experience could be revealed. The majority seemed to agree with Professor Cohen that the dualistic position was neither obvious nor natural. The mutual exclusiveness

of the groups of entities was neither unequivocally demanded by the facts of experience nor uncompromisingly required by psychology. And finally, even if the twofold division were the most available and suggestive, the distinction was not a sharp one, nor necessarily of prime importance for all philosophical interests. In short, there was implied a rather general endorsement of the executive committee's opinion that the "matter of chief moment in the discussion . . . is . . . not what entities (real or imaginary) can most suitably be called 'mental' or 'psychical,' but whether certain asserted entities, which (suitably or otherwise) *have* been so called, exist and are to be recognized by metaphysics and by psychology." The chief interest, that is to say, was not in locating the various entities in one or the other of the two groups. The existence of the entities is called in question and a justification for their classification demanded.

One's immediate impressions of the meeting, however, are apt to undergo a revision in later reflection. The auditor was likely to experience the stimulus of apprehending points of view characterized by novelty, a healthy independence of tradition, and a happy recognition and utilization of the services of science; there seemed to exist a vivid interest in the discovery of problems rather than in the stubborn defense of positions, and the listener was made to expect the germination of ideas bearing some promise of that progress in inquiry signalized in the presidential address. With respect to the problems under discussion and related issues, a survey of the philosophical literature of recent years inculcates the belief that philosophical opinion has traveled far in that time. Even the casual reader notices the nonchalant and somewhat boisterous manner in which liberties are taken with older notions of consciousness and its content, and the irreverential handling of the "psychical." Some, at least, of the philosophic fashions seem to be in danger of becoming old-fashioned. These impressions the meeting of the association certainly did not dispel. Such observations lead one to be sanguine. But coupled with this was the generally depressing effect of disagreement and variance of opinion, scarcely mitigated by isolated instances of community of belief.

The revision of one's impressions in later reflection rather reverses the sources of comfort and discomfort. For at a distance, the agreement which Professor Creighton found emerges from the chaos of first impressions. One perceives that, after all, the platforms expressed at the meeting are not easily grouped into types and schools. The comparative absence of fixed lines of demarcation between philosophic "denominations" augurs a flexibility and adaptability of viewpoint that promise some measure of progress, and of agreement, even if that agreement be one of rejection rather than of acceptation.

In later reflection over the proceedings, one realizes that the positions expounded include possibilities of agreement that were imperceptible at the time of expression. And one can safely state that the old hard-and-fast, mutually exclusive type of distinction between entities is in bad favor with the majority of the participants; and while not all would unite in anathematizing it, no one would obstinately defend it or attach an overweening importance to it. There also was a marked tendency to agree in the exclusion of epistemological considerations from the topic of discussion: this is a fact which in itself affords encouragement, since some degree of isolation of the question is thereby secured.

On the other hand, one can hardly avoid concluding that first impressions were accompanied by an exaggeration of the novelty of idea, of the freedom from the surveillance of the past, and of the approximation toward precision in the defining of issues. Not a small part of what seemed novel turns out to have been familiar notions in a new garb—as examples of the peculiar trick practised by old doctrines of getting intimately involved in the new doctrines which are bravely asserting their independence of the traditional, thus turning up in disguise like an unwelcome guest at a masquerade. In borrowing the terminology of the sciences, and, in particular, of the biological sciences, the contents of our terms sometimes become a not very judicious mixture of relevant and irrelevant philosophical and scientific elements. The recasting of philosophical problems in the language of science is not a solution of the problem. The utilization of the sciences is wholly praiseworthy, of course; but the confusion of reformulations and solutions is another matter. The proceedings seem to disclose instances of such confusion.

An attempt to summarize the points of agreement and disagreement in a discussion involving so many minds, and to characterize the temper of the meeting, is probably a presumptuous proceeding. It is possible that any endeavor to appraise the value of the meeting depends so largely upon one's personal equation that the task had better not be attempted. But these observations, thanks to their generality, may not be wholly amiss or offensive. At any rate, however ungracious the attempt to estimate results, it can hardly be inappropriate to indicate the vigor of interest and the cooperative spirit evinced by the members of the association, and to present some scanty recognition of the services of the executive committee.

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REVIEWS AND ABSTRACTS OF LITERATURE

Critical Realism: A Study of the Nature and Conditions of Knowledge. Roy Wood Sellars. Chicago: Rand, McNally & Company. 1916. Pp. x + 283.

We are indebted to Professor Sellars for a keenly-argued and comprehensive treatment of epistemological problems. The merits of his book will, I venture to predict, meet with appreciative recognition from students of philosophy wherever it is read. The reader is impressed by the author's extensive acquaintance with the literature of the subject and by his critical acumen; if the constructive portion of the works fails of completeness it is only fair to assume that this will be made good, in accordance with the plan of the author, in subsequent volumes. The statement in the preface that the views developed in the book "are the summary of many years of teaching and of hard and pretty constant thinking" (while perhaps unnecessary) is not difficult of belief, and the theory of knowledge to which this protracted reflection has led is worthy of thoughtful consideration.

One notable merit of the book is its historic approach to the problem. The author refers to the agreement of Locke and Berkeley that if there is to be knowledge of the physical world it must be of the nature of direct or indirect apprehension. Either the physical world itself or a substitute copy must be present to the understanding when we think. But while he rejects the copy theory it is refreshing to find that the author does not regard the shortcomings of the copy theory as sufficient ground for returning to immediate realism. Rather the opposite: he holds that the absolute untenability of immediate realism leads inevitably to the copy theory, and that the final solution of the problem requires us to push forward that movement of critical reflection of which it is the first step.

Chapter I. is given to a discussion of the immediate or "natural" realism which holds that the physical thing itself is present to consciousness. Reflection upon experience soon discloses that the individual perceives only the appearances of the thing and not the thing itself. Science confirms this conclusion; it "unconsciously swings ever more completely away from the assumption that physical things are open to our inspection or that substitute copies are open to our inspection" (p. vi). Realism dominates in science, but idealistic motives increase. The situation is relieved by a temporary compromise: the percept is admitted to be mental, but is referred to a physical thing, its cause. The problem is still insistent and its solution requires the full development of the idealistic factor in experience. The facts which count in favor of idealism are presented in

Chapter III., "The Advance of the Personal," and the following four chapters are devoted to questions arising in connection with the idealistic reconstruction of experience. The conditions of perception are seen to be different with every individual and concepts to be developed under the influence of individual interests and purposes. Idealism is successful at least in proving that realism, if it is to be saved, must abandon the view that the physical object is immediately present to perception. Idealism shows that the dualism ordinarily recognized between mental and non-mental in perception is one within the unity of the mental as a whole; hence knowledge can not be a direct apprehension by the mind of the non-mental.

In Chapters VII. and VIII. the author passes from a criticism of idealism to a statement of his own view, that of mediate or critical realism. The error involved in idealism turns out to be the assumption that knowledge demands the presence of what is known. But because things which common sense assumes are present to the mind and at the same time non-mental prove to be mental, it in nowise follows that objects known and not present to the mind are likewise mental. "My thesis is then that idealism and realism have had essentially the same view of knowledge and that the large measure of sterility which has accompanied philosophical controversy is due to this constant assumption that knowledge always involves the presence of the existent known in the field of experience. Philosophy limited itself to a controversial study of the subject-object duality and did not lift its eyes to the triad consisting of subject, idea-object (in science analyzable into propositions) and physical existent. It is to this triad that critical realism calls attention" (Preface, vii). "The thing is absent while the idea is present. This idea may consist of propositions which are referred to the thing" (p. 150). Thus physical things are causally connected with percepts and help to control their development, but are not perceived. "What is perceived does not cause its own perception. But we are able to conceive this *absence-in-presence* of the physical thing by means of the distinction between the thing and the thought of it which we already possess. The presence-in-absence of thought makes thinkable the absence-in-presence of perception" (p. 129).

Very skilfully the author formulates his own view in connection with the historical development of epistemological theory; he is also remarkably successful in the effort which every thinker who chooses this approach must make, to prove that his own theory is the natural goal of the historical development, reconciling opposing views and including the truth to which each in its one-sided way does justice. But this is only the first part of his task. The second and more important is to work out with thoroughness his own view, demonstrating in some

detail that it solves the specific problems of the field. In this he has made only a beginning. The reader is particularly desirous of learning how the systematized concepts through which the subjectivity of perception is overcome and the thinker is made acquainted with independently existing reality, themselves gain objectivity. Some interesting suggestions are made in Chapter II. Individuals are not in a position to ascertain, we are told, how divergent their thing-experiences are, when these are derived from perception. Hence they are compelled to resort to tests of grouping and of arrangment in series. "Such tests rest upon, and are bound up with, movement, for which passive content is unimportant. The perception of movement is a perception of a relation or a successive series of relations. Hence we seek correspondence and not similarity. In other words, order dominates over passive quality" (p. 62). These statements are promising, and it is a pity that the author does not continue his investigations along this line. The only other suggestions as to the criteria of truth and objectivity are given in the last chapter on "Truth and Knowledge." Correspondence is admitted to be a genuine test, but limited to immediate experience. "At the level of mediate realism it is realized that such a comparison between physical existents and propositions which are supposed to contain knowledge is impossible. The test is immanent and concerns the harmony between data and propositions based on them according to inductive and deductive methods" (p. 282). Coherence, we are elsewhere told, is one of the criteria of truth, but not its universal sign. How then does reality exercise control over the propositions which claim to give knowledge of it? Is there a preestablished harmony between the system of ideas and the order of existence?

Instead of a further exposition of mediate realism we are given an attempted solution of the mind-body problem in a long chapter entitled "Is Consciousness Alien to the Physical?" Evidently the author attaches considerable importance to the view here set forth; he remarks in his preface: "I feel certain that the reader will find many parts of the chapter extremely interesting" (p. vii). (Of course, it is a matter of taste, but such a statement seems to me out of place in the preface to a scientific treatise. It reminds one too much of the "puffs" which magazine editors sometimes give to the contributions they publish.) The theory is in brief that consciousness is a "functional variant of the cortex" and "its unity is that of the integrative activity of the brain which it helps direct." Such statements (and this formula is repeated with variations of language) mean little or nothing without a very clear and thoroughgoing explanation. The statement that consciousness is a functional variant of the cortex is capable of radically mechanistic interpretation. Yet

evidently the author does not mean it to be thus understood, for he rgards it as inconsistent with evolution to hold that nature is a dead-level system and says there is no adequate reason to deny that the physical world rises to the level of purposive activity. But if purpose enters the natural world as a directing agency it must bring with it a type of relation different from, and in a sense contrary to, the externality of mere mechanism. The author recognizes none such, however; he says there is no valid reason to deny that consciousness is an extended manifold and proposes as a name for his theory "Neo-Materialism." Chapter IX. is the least valuable and interesting part of an excellent book.

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The Problem of Personality. ERNEST NORTHFIELD MERRINGTON. London: Macmillan and Company, Limited. 1916. Pp. 220.

An attempt to show that personality must be accepted as the initial datum from which we may proceed to a statement of the fundamental truths of philosophy and theology forms the subject-matter of this book. The first part of the work, which is devoted to an exposition and criticism of recent British and American writers in whose theories the concept of the self has occupied an important place, serves as the background with reference to which the constructive part of the treatment is concerned.

We pass immediately to the crucial point of the argument. The concept of experience has been dangerously vague. A scrutiny of this concept discloses the fact that the subject-object is the primary datum involved in all experience. The author lightly dismisses the difficulty in the position that if the subject-object be the initial assumption then the same reality must be ascribed to the object as to the subject. The subject, it is asserted, is the permanent center of reference for a shifting circumference of objects. Moreover, the subject is not limited in experience to cognition; the self which feels is as much the subject in experience as the knower. Self, person, consciousness, and kindred concepts are discovered to be various phases of the subject—"The one for whom any set of experiences is." By way of comment on this position we can only reiterate that argument which claims the advantage for experience or immediacy as the initial datum in philosophical theory. Here experience is used advisedly to denote that vague, indefinite, unanalyzed context upon which a later reflection operates in making the distinction of subject and object. The self as subject is held to be coexistential with the object, both being analytically evolved from an original complex.

With the reality of the self established the last chapters are occupied with the deduction of a metaphysic of existence, a metaphysic of values, and a metaphysic of reality. The reality of an absolute self is found to be implied in the reality of the self. This absolute self as a personality is derived from the nature of the subject as experiencing meaning or values. Finally, the worlds of "existence and of value upon which in distinction from each other I have laid so much stress, coalesce in the complete expression of divine purpose and of absolute value."

SAVILLA ALICE ELKUS.

SMITH COLLEGE.

Natural Rights: A Criticism of Some Political and Ethical Conceptions. DAVID G. RITCHIE. Third edition. London: George Allen and Unwin. 1916. Pp. 300.

This book, first published in 1894 and now appearing without revision, shows inevitably the traces of controversies for the most part forgotten. On the other hand, not only are the general principles discussed of perennial interest, but in several instances particular problems are dealt with which are of present significance. Such, for example, is the consideration of the propriety of limiting the hours of work of railway employees, and of the extent to which liberty should be interfered with in the prevention of strikes.

The theoretical argument of the book is as follows: An appeal is made to natural rights when no legal basis can be found for the attainment of certain desired ends, or, more particularly, for the relief of what is felt to be oppression. The term "natural rights" is ambiguous. Of the various senses in which it has been used, the only legitimate one for political purposes is that of "the more fundamental rights which would be guaranteed by a society which was as it *ought* to be." The determination of the duty of society in this matter is based upon considerations of utility alone, and is relative to given circumstances. The greater part of the book is occupied with a discussion of particular "natural" rights, and is an illuminating commentary upon the difficulties of reconciling actual American practise (based upon utility) with American principles (based upon abstract and absolute rights).

HARRIETT BRADLEY.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE, March, 1916. *Le rêve dans la littérature moderne* (pp. 209–274): Y. DELAGE. – The writer considers the use made of dreams in the writings of many nineteenth-century

authors, and concludes by indicating "that which is forbidden, that which is permissible, and that which one should demand" in connection with such use of dreams. *La crédulité primitive et ses survivances* (pp. 257–287): TH. RIBOT. – Distinguishes between those whose credulity is permanent and those with whom it is transient or partial; the former are characterized by inaptitude for logical thinking, repugnance to hesitation and doubt, and by finding repose in immediate acceptance and belief. *Une forme de l'automatisme social: la convention* (pp. 288–297): MARC DUFAUX. – Convention signifies a "sentiment, idea, a manner of thinking, speaking, or acting, which conforms or tends to conform to a type or ready-made representation, in accordance with which the collective consciousness demands that the ideas, sentiments, and acts of every one be modelled." Conventions are formed by crystallization of social experience because of a need for simple and universal guiding formulas. *Notes et discussions. Analyses et comptes rendus.* Betrand Russell, *Our Knowledge of the External World:* M. SOLOVINE. *Varia. Revue des périodiques.*

Conklin, Edwin Grant. Heredity and Environment. Second edition. Princeton: Princeton University Press. 1917. Pp. 288. $2.10.

Morgan, Thomas Hunt. A Critique of the Theory of Evolution. Princeton: Princeton University Press. Pp. 208. $1.50.

Robie, W. F. Rational Sex Ethics. Boston: Richard G. Badger. 1917. $3.50.

Rockefeller, John D., Jr. The Personal Relation in Industry. New York. 1917. Pp. 43.

Wallin, J. E. Wallace. Psycho-Motor Norms for Practical Diagnosis. Psychological Monographs, Vol. XXII., No. 2. Princeton, N. J.: Psychological Review Company. 1916. Pp. v + 102.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held in London on Monday, January 22, Dr. H. Wildon Carr, President, in the chair. Mr. C. E. M. Joad read a paper on "Monism in the Light of Recent Developments in Philosophy." A monistic theory, he maintained, confuses two quite distinct propositions. A thing is what it is, not only because it has a place in the universe and because of its relations to other things, but also because those relations are not the thing. To assert that a thing is its relations involves a second and quite different proposition. A thing, indeed, presupposes reality and its connections with reality, just as our apprehension of a truth pre-

supposes reality. But when we assert that a thing is what it is because of its connections with reality, we do not mean that the thing is its connections. They condition it, but it is separate from them. The other main monistic argument is to the effect that the ultimate real being one and indivisible, all analysis by means of which we arrive at a world composed of things and relations is a false abstraction of thought, which leads us away from reality. It is true that a whole, although created by its parts, is more than their sum. A whole, as opposed to an aggregate, is a unity,—a new entity which has come into being through their synthesis. But such a whole clearly has parts which it can not be a fiction to distinguish from one another. The fact that analysis of a whole into parts destroys the whole does not mean that it also destroys the parts, or that the parts are not really its parts, or that they can not exist as distinguished from one another.

Dr. Smith Ely Jelliffe, of New York City, has been appointed editor of the *New York Medical Journal* to fill the vacancy caused by the death of Dr. Claude L. Wheeler. Dr. Jelliffe was editor of the *Medical News* before that periodical was discontinued, and is now managing editor of the *Journal of Nervous and Mental Disease.*

Dr. Gregory D. Walcott, professor of philosophy and psychology in Hamline University, has been given a year's leave of absence to teach psychology and logic in the government college of Tsing Hua, China. He expects to sail from San Francisco about the first of July.

Professor H. S. Jennings, of the Johns Hopkins University, is delivering a series of four Westbrook lectures on "Heredity and Evolution" at the Wagner Institute, Philadelphia.

Mr. Alfred E. Rejall, formerly instructor in psychology in the New York State Teachers College at Albany, has been appointed instructor in education at Boston University.

Professor E. A. Kilpatrick, of the Fitchburg, Massachusetts, State Normal School, is exchange professor this year at the Bellingham State Normal College, Washington.

Dr. Joseph K. Hart, formerly professor of education in the University of Washington, has been appointed professor of education at Reed College, Portland, Oregon.

Dr. Fabian Franklin, associate editor of the New York *Evening Post,* has resigned. Dr. Franklin was formerly professor of mathematics in the Johns Hopkins University.

The Gifford lectures at Glasgow University are this year being given by Professor Samuel Alexander, of Manchester University, on "Space, Time, and Deity."

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AN ALLEGED NEW DISCOVERY IN LOGIC

WHEN a logician openly claims to be the discoverer of a logical character radically revolutionary and hitherto unknown it is fitting and proper and necessary that the alleged new discovery, and the evidence supporting it, should be subjected to careful scrutiny. The purpose of this discussion is to make such an examination. For Professor Dewey has felt himself called upon to enter the logical arena in defense of what he seems to think is a type or kind or form of judgment not sufficiently taken into account by present-day logicians. And he intimates that it has been altogether neglected and ignored by logicians of the past. Such judgments are defined as "propositions relating to *agenda*—to things to do or be done, judgments of a situation as demanding action." He gives such examples as the following: "M. N. should do thus and so, it is better, wiser, more prudent, right, advisable, opportune, expedient, *etc.*, to act thus and so."[1] "He had better consult a physician" is the specific judgment of this type which he uses most to exemplify his theory. That he regards these as constituting a form of judgment distinct from any of the judgment forms usually enumerated by logicians I infer from the criticism which he directs at contemporary logicians for daring to omit this form of judgment. He writes: "Mr. Russell has recently said that of the two parts of logic the first enumerates or inventories the different kinds or forms of propositions. It is noticeable that he does not even mention this kind as a possible kind. Yet it is conceivable that this omission seriously compromises the discussion of other kinds. . . . It is silly to dwell upon the practical importance of judgments of this sort, but not wholly silly to say that their practical importance arouses suspicion as to the grounds of their neglect in discussion of logical forms in general."[2] These passages clearly imply that in Professor Dewey's mind the judgment of practise should be recognized as a judgment form distinct from any of the judgment forms usually enumerated.

[1] *Essays in Experimental Logic*, p. 335.
[2] *Loc. cit.*, pp. 336 ff.

Before considering Professor Dewey's argument on its merits I can not refrain from insisting that justice should be done to Aristotle, the Father of Logic. It is strange that Professor Dewey should have overlooked the famous discussion in the Nichomachean Ethics usually entitled *The Doctrine of the Practical Syllogism.*[3] Here Aristotle shows very clearly what the application of logic to action is, but he was too good a logician to fall into the trap either of making practicality a unique logical character, or of setting practical syllogisms into a figure to themselves. For he was well aware of the fact that logically speaking they are just like other syllogisms.

Passing now to the argument, it should be noted that Professor Dewey does not make the mistake commonly made by those who advocate the recognition of value-judgments alongside of existential or ordinary judgments, the mistake, namely, of supposing a different origin or source for the value-judgment from that of ordinary theoretical judgment, referring it to the affective-volitional aspect of consciousness rather than to the intelligence. Indeed he expressly and emphatically repudiates this much-worn theory. "I do not mean by practical judgment an alleged type of judgment having a different organ and source from other judgments."[4] It is, of course, futile to direct the familiar arguments against him which are perfectly valid when aimed at this theory, since they are nullified by this explicit denial.

Nor, on the other hand, does he make the mistake of arguing that all judgment possesses the character *agenda.* To be sure he came dangerously near advocating such a theory of judgment, and I shall presently indicate how this constitutes one serious defect in his argument. That he does stagger along the edge of this precipice is shown by the statement quoted above: "This omission seriously compromises the discussion of other types." For why does it so seriously impair the exposition of other types unless other types are supposed to possess the same character? Of course when pragmatic logic is consistently carried out this is the inevitable conclusion. It is not entirely void of significance that Dr. Schiller should have been moved by the reading of Professor Dewey's discussion to write a rather lengthy comment in which he raises the question whether "as a sheer matter of logical fact, this type is not discoverable in *all* judgments." And he answers it by saying: "It appears to me to be hardly possible to give anything but an affirmative answer to this question."[5] But Professor Dewey avoids this consequence by refusing to carry his theory to its logical conclusion. He writes: "I do not profess, of

[3] Bks. VI., 9 and VII., 5. For a discussion of the theory see Grant, *Ethics of Aristotle.*

[4] *Loc. cit.*, p. 335.

[5] This JOURNAL, Vol. XII., p. 684.

course, to have shown that such is the case for all propositions; that is a matter which I have not discussed."[6] But for the benefit of Dr. Schiller, who has attempted to show this to be the case for all propositions, and for the guidance of Professor Dewey, should he ever be inclined to make a similar attempt, I may refer in passing to Mr. Bradley's trenchant and hitherto unanswered criticism of Bain's theory of practical belief.[7] For Bain actually anticipated pragmatic logic by advocating the identical notion of judgment which Dr. Schiller has openly espoused and which Professor Dewey has covertly implied, which shows, incidentally, that James was not far wrong when he gave to his *Pragmatism* the sub-title "A new name for some old ways of thinking." In so far then as Professor Dewey is guilty of holding that all judgments are judgments of practise he may be referred to this criticism by Mr. Bradley. I am here concerned only with his contention that judgments of practise are entitled to be considered a unique type of judgment, and to be given a status like that of any other judgment form.

Professor Dewey bases his argument upon the fact that practical judgments have a unique sort of subject-matter. He mentions six ways in which their content is supposed to differ from that of ordinary theoretical judgments. Before I finish this discussion I propose to consider severally these supposedly unique features of the subject-matter of judgments of practise. But before proceeding to do that, I wish to point out certain latent ambiguities and misconceptions which seem to me seriously to undermine, if they do not entirely destroy, the whole edifice of his argument.

First of all let me develop the point which I mentioned and promised presently to consider. I have said that Professor Dewey barely avoided the pitfall into which the less wary Dr. Schiller fell, the pitfall of arguing that all judgments are practical. But he does go so far as to suggest that this may be the case. "I have," he writes, "at least ruled out any purely dialectic proof that the *nature* of knowledge as such forbids entertaining the hypothesis that the import—indirect if not direct—of all logical propositions is some difference to be brought about. The road is at least cleared for a more unprejudiced consideration of this hypothesis on its own merits."[8] By merely making this suggestion Professor Dewey implies that practicality can constitute the differentia of judgment, in general, at the same time that it is that characteristic which marks off one form of judgment from other forms. Unquestionably there lurks here an ambiguity. It would seem that practicality must either

[6] *Loc. cit.*, p. 389.

[7] *Principles of Logic*, pp. 18 ff. *Cf.* Bain, *Emotions and the Will*, Chapter on "Belief."

[8] *Loc. cit.*, p. 389.

be used as the differentia of all judgment or as that characteristic which distinguishes one form of judgment from other forms. It argues an insufficient analysis of the facts to proceed on the assumption that practicality can be used in both ways. If any one says, as Dr. Schiller says and as Professor Dewey suggests, that all judgments are judgments of practise, then he would seem to be logically bound to admit that judgments of practise do not constitute a distinct judgment form. And if any one says, as Professor Dewey says, that the judgment of practise is a unique judgment form, then he would seem to be logically bound to admit that practicality is not a distinctive characteristic of all judgments. For in order to distinguish one form of judgment from another it is necessary that there should be some respect in which they differ. But if all judgments without exception are practical, one judgment form could not differ from another in respect of practicality unless it were held that judgment forms are to be determined by degree of practicality. But to say that one form of judgment is different from others by virtue of the fact that it possesses the characteristics which constitute practicality is quite a different thing from saying that judgment forms are to be determined by the degree of practicality which they exhibit. And since Professor Dewey maintains the former and not the latter there is a latent contradiction involved in his suggestion that all judgments may possess the characteristics constituting practicality.

A second misconception which I find in Professor Dewey's discussion is the notion that this form of judgment is to be determined solely by reference to subject-matter or content and yet is to be recognized alongside of those which have been determined in an entirely different way. He says that he means by a judgment of practise "simply a kind of judgment having a specific type of subject-matter." But the usual way of determining what form a judgment has is to abstract from the subject-matter and consider the formal arrangement of the content. Or to state it more technically and hence more accurately, the usual method of determining judgment forms is to consider the degree of logical stability or consistency which is exhibited by the content regardless of what that content may be. Accordingly the same judgment form may serve to embody various kinds of subject-matter, and on the other hand the same subject-matter may be embodied in different judgment forms. Now if Professor Dewey wishes to devise a new method of determining what the forms of judgment are, a method, let us say, based upon kinds of content or subject-matter or degree of practicality, he is certainly at liberty to do so. But it is beyond a doubt incumbent upon him to justify this new method before the forum of logic. This he has not even attempted to do. Yet he presumes to ask those who have deter-

mined the forms of judgment by reference to degree of logical stability to include among the forms which they have so determined one which he has determined in an entirely different way. This is an unjust demand and such a procedure would be highly impractical. It could not come to good, but would only result in a hopeless confusion in the theory of judgment forms. It might, indeed, be just to make such a demand if judgment forms were like planets—indifferent to the method by which they are determined. It is perhaps true that the planet Neptune was justly entitled to be included among the planets when it had been discovered by induction and before it was discovered by observation. But determining judgment forms is not analogous to discovering planets. You get a wholly new and radically different set when you use the usual method from what you would get if you were to employ the method suggested by Professor Dewey. Consequently it is altogether unfair to ask logicians to include this bastard form among those they recognize as legitimate.

A third nest of ambiguities is to be found in his loose use of the term judgment. I think that it can not consistently and successfully be denied that Professor Dewey uses the term in at least two radically different senses. Moreover, the term judgment and the term proposition are seemingly used synonymously. In some contexts he seems to mean by judgment or proposition the psychical act of an agent reaching a decision relative to the course of action to pursue in a determinate situation. It is so used when he writes "the proposition is itself a factor in the completion of the situation, in carrying it forward to its conclusion."[9] But in other contexts he identifies judgment with the transformation of the given. It is so used when he speaks of practical judgments implying "the seeming paradox of a judgment whose proper subject-matter is its own determinate formation."[10] Now this transformation of the given is the movement toward logical stability and consistency, the dialectical movement of Hegel, the movement toward concrete universality of Dr. Bosanquet with the one radical and fundamental difference that Professor Dewey identifies this process of transformation with temporal transition—the evolutionary process of Herbert Spencer. But if he had correctly interpreted Hegel he would have known that the reconciliation (*Aufhebung*) of two such opposites as the Hegelian dialectical movement and the Spencerian evolutionary process is not to be attained by simply identifying one with the other. I shall consider this second theory of judgment later.

Of course Professor Dewey denies that he is using the term judgment to mean a psychic act or state. But what else can he possibly

[9] *Loc. cit.*, p. 338.
[10] *Loc. cit.*, p. 369.

mean when he talks about the proposition or judgment being a factor in the completion of the situation which is supposed to constitute the subject-matter of judgment (in the second sense)? I quote his defense because it illustrates most excellently another ambiguity in his use of the term judgment—the ambiguity, namely, of using the term in its general signification in a context which demands its use in the specific sense of some definite judgment. *Judgment* is different from *a judgment* or *the judgment*, and to omit the article in a context where consistency demands that it should be used, for no apparent reason except perhaps to avoid the consequence to which consistency would lead, is manifestly unfair. He writes: "But (to obviate misunderstanding) this does not mean that some psychic state or act makes the difference in things. In the first place the subject-matter of the judgment is a change to be brought about; and in the second place this subject-matter does not become an *object* until the judgment has issued in act. It is the act which makes the difference, but nevertheless the act is but the complete object of judgment and the judgment is complete as a judgment only in the act."[11] If the act is but the complete object of judgment, it is pertinent to ask: "Of what judgment?" Why has the article been omitted here when it is employed to qualify every other usage of the term judgment in this passage? It is astonishing to what ambiguity the omission of the article in this case leads. With the article the statement could easily be shown to be self-contradictory. For it would mean that an *actual* act is a part of the subject-matter of a judgment whose subject-matter is constituted by the incomplete situation which the act completes, or that an actual act is a part of the subject-matter of a judgment which conditions it. But the omission of the article makes the statement appear plausible. Yet is it fair to omit it? All through this passage Professor Dewey is talking about a definite judgment and a definite situation and not about judgment in general. Consequently I must insist that there is no justification for using the term in its general signification, and that the use of the article is a desideratum in this context.

Returning now to the dominant definition of judgment, I want to show that on the basis of this definition the examples which Professor Dewey gives are really not judgments at all. As I said, he means by judgment in general the actual temporal development which takes place in the objective field. By a judgment or the judgment he means some one situation taken from the moment it begins as a situation until it is completed by being met by some course of action. During this time, the length of which may vary almost indefinitely, the given or whatever content was there when the situation began as a

[11] *Loc. cit.*, p. 388.

situation is transformed. *This process of transformation in any definite situation is the judgment or a judgment.* When the situation is somehow met you get the complete subject-matter, and while it is being met you have an incomplete subject-matter, but the whole process is *the or a judgment.* Now I submit that upon this basis such a judgment as "He had better consult a physician" can not be a judgment. For it certainly is not the whole process of transformation of a given into a completed subject-matter, *but only one stage of that process.* Hence it can not be a judgment according to Professor Dewey's most consistent definition of a judgment. And before it could be such Professor Dewey would have to mean by a judgment or the judgment some definite stage in this process of transformation and not the whole of that part of the process constituted by the situation. Then the situation itself would constitute what I should call an inferential whole—a complex of judgments. But even this important modification would not be sufficient. Professor Dewey must learn, as Mr. Russell has learned, that "both in thought and in feeling, to realize the unimportance of time is the gate of wisdom."[12] That is to say, he must cease thinking of the process as a temporal process. To be sure, time is included as one of the factors, but if it is regarded as a temporal movement then one is logically committed to the view that each fleeting moment constitutes a new stage in the situation and hence a new judgment, whereas the situation may and often does remain essentially the same, so far as logical development is concerned, through several moments. And this proves that the element of temporal transition is a secondary factor, and that the logical development is the all-important aspect of the situation. So far as I am able to judge, Professor Dewey could not account for any judgment of practise apart from some such modification of his theory of judgment as I have here indicated.

The last general ambiguity which I shall mention is connected with his theory of judgment and is closely connected with the defects which I have just indicated. If I may turn an apt phrase of Professor Dewey against himself, it is the "prior dogma" to the effect that it makes sense in logic to speak of a judgment as though it were independent and capable of existing while having only a part of its subject-matter. A further implication of this dogma is that the judgment continues to be the same judgment while its content develops. I call this a dogma because nowhere do I find anything in the nature of a proof that judgment is of this nature. Take this sentence as a specimen of the ambiguity I have in mind: "A practical proposition affects the subject-matter for better or worse, for it is a judgment as to the condition (the thing to be done) of the exist-

[12] *Scientific Method in Philosophy,* p. 167.

ence of the complete subject-matter."[13] I wonder why Professor Dewey did not say "A practical proposition affects *its* subject-matter for better or worse because it is a judgment as to the condition of the existence of *its* complete subject-matter." To change *the* to *its* is the only way I can make any sense out of this passage, but when the change is made we find this dogma staring us in the face. We have a practical proposition with only a part of its content, getting in some mysterious way inside of that portion of its content which is present and thereby helping to produce that part which is not yet in existence, and yet retaining its identity throughout this prestidigitating to the extent that it can be called the same judgment. How can this be? When in logic we speak of the subject-matter of a judgment we mean its *complete* subject-matter and not a part of its subject-matter. If it is a judgment as to the condition of the existence of the complete subject-matter, it is the complete subject-matter of *another judgment* and not its own subject-matter. There is no difference between a judgment and its subject-matter, and the subject-matter of every judgment is as complete as that judgment requires. Here we have the identification of the judgment which conditions another judgment with the judgment which it conditions. When the subject-matter varies or gets completed the judgment changes. Or, to put it as it should be put, the least perceptible development toward logical completeness in the subject-matter of a judgment always necessitates the making of a new judgment embodying the change, indeed always constitutes a new judgment embodying the change. Consequently it is highly misleading to speak of a practical proposition affecting the or its subject-matter for better or worse, because when the subject-matter is once affected for better or worse it is no longer the subject-matter of that, but of another, judgment.

It is not easy to convict so skilful a writer as Professor Dewey of so flagrant an ambiguity and I am not sure that I have made my meaning clear. It is only when you change *the* to *its* in the statement quoted that the point becomes obvious. But there is one passage which is charged with the same dogma where a change of language is not needed to make it clear to the reader. He writes: "The judgment will be a judgment (and not a chance reaction) in the degree in which it takes for its intervening subject-matter the value-status of various objects."[14] The phrase *intervening subject-matter* can not be interpreted in any other way than as meaning that the same judgment has different subject-matter at one time from what it has at another. In some contexts Professor Dewey is more guarded

[13] *Loc. cit.*, p. 340.
[14] *Loc. cit.*, p. 362.

and seeks to avoid the difficulty by holding to the view just advocated, the view, namely, that the judgment is identical with the subject-matter and that a change in one is equivalent to a change in the other. But he succeeds in avoiding one ambiguity only by falling into another. Thus when he says, "The judgment is complete as a judgment only in the act,"[15] he is taking this position. But what is a judgment which is not complete as a judgment? Is it half or one third or one sixth a judgment? Just how much of a judgment is it anyway? Merely asking these questions is a sufficient refutation of such a statement. Every judgment is complete as a judgment. If it is not complete as a judgment, if it does not possess the differentia of judgment, it simply is not a judgment. The judgment "He had better consult a physician," to use Professor Dewey's example, is a complete judgment and has all the ear-marks of a complete judgment. The act of consulting a physician has nothing to do with the completing of this judgment. The judgment which embodies that act is a different judgment and would be expressed so: "He is consulting a physician."

I propose now, somewhat belatedly, I admit, since this discussion of general ambiguities has extended itself far beyond what I intended at the outset, to take up in order the six characteristics which Professor Dewey mentions as constituting the uniqueness and practicality of judgments of practise. I shall show (1) that some of these are possessed by all judgments, (2) that some are possessed by a larger group of judgments than those which he denominates judgments of practise, and (3) that one is not a characteristic of any judgment. Having done that, I shall show what form of judgment these judgments he mentions really are. That should be enough to put a quietus to the theory that the judgment of practise is a unique form of judgment.

I. "Their subject-matter implies an incomplete situation."[16] If this means that the content of any judgment expands, when reflected upon, into the content of a more inclusive judgment, then this is a characteristic of all judgments. For it is one of the distinctive features of judgment that every judgment, whenever it is reflected upon, expands into a more inclusive one. But if Professor Dewey is here referring to the fact that certain judgments are contingent because their subject-matter includes a temporal element, then it can be answered that he himself nullifies the force of this contention by referring a little further on to the fact that there are *other* contingent judgments besides those which possess the other five characteristics of judgments of practise. In the course of his discussion of the sec-

[15] *Loc. cit.*, p. 388.
[16] *Loc. cit.*, p. 337.

ond characteristic he says distinctly that practical judgments are distinct "from another kind of contingent proposition, namely, that which has the form 'He has started for your house:' . . . The unfinishedness of the given is implied in this proposition, but it is not implied that the proposition is a factor in determining its completion."[17] In other words, unfinishedness is a characteristic of *contingent judgments,* and the mere fact that the subject-matter of a given judgment implies an incomplete situation is admittedly not enough to constitute it a judgment of practise, and is not even unique.

II. "Their subject-matter implies that the proposition is itself a factor in the completion of the situation, carrying it forward to its conclusion."[18] Here he uses the term proposition instead of judgment, but, as I said above, I have searched in vain for a distinction, and hence consider it just to infer that they mean the same for Professor Dewey. And in order to make the sentence refer to one judgment instead of to several, I consider it just to substitute the phrase *the subject-matter of a practical proposition* for the phrase *their subject-matter.* And of course Professor Dewey (as I pointed out above) thinks that the whole situation in its completed form constitutes the subject-matter of the judgment. Rewriting the sentence embodying these changes, all of which are certainly legitimate, we get the following enlightening result: "The subject-matter of a practical judgment implies that the practical judgment is itself a factor in the completion of its subject-matter." I submit that in order for this to mean anything the term *practical judgment* must have a different connotation in the latter to what it has in the former context. In the former case it is the judgment of logic and is like any other logical judgment. In the latter case it is a psychical act and as such has no proper place in logic. A judgment is identical with the whole which ties the parts of its subject-matter together, or, to express it more accurately, with the whole which is constituted by its subject-matter, and for that very reason it can never be a factor in or a part of its subject-matter. A whole can never become a part in the whole which it is. Consequently when Professor Dewey speaks of the practical judgment or proposition being a factor in the completion of the subject-matter, he must mean by the term judgment or proposition some psychical act and not a logical judgment. Otherwise the statement is wholly meaningless and self-contradictory.

III. "A practical proposition affects the subject-matter for better or worse, for it is a judgment as to the condition (the thing to be done) of the existence of the complete subject-matter."[19] The same

[17] *Loc. cit.,* p. 339.
[18] *Loc. cit.,* p. 338.
[19] *Loc. cit.,* p. 340.

criticism applies here that applies to number II. I have also criticized this passage at length above in the discussion of Professor Dewey's "prior dogma."

IV. "The practical proposition is binary."[20] I must confess to a failure to understand what Professor Dewey is driving at in his discussion of this point. I think others must agree with me in hoping that he will soon make this clearer. Now, of course, the ordinary hypothetical and disjunctive forms of judgment are also binary, if binary means simply a judgment embodying two explicit judgments within its subject-matter. And if binary means complexity it is a characteristic of all judgments as is admitted by all logicians. There is nothing especially unique in the fact that a judgment is binary. Some judgments are even infinite. Indeed, some of the examples of Professor Dewey, if carefully analyzed into their constituents, would be found to embody hundreds of other judgments. I can see nothing here that can rightly be claimed to be a unique feature of judgments of practise.

V. The practical judgment is both factual and hypothetical. As early as 1885, in his *Knowledge and Reality,* Dr. Bosanquet advanced and defended with admirable lucidity the thesis that these two aspects are not antagonistic, but reciprocal, and that *both are present in varying degrees* in all judgment. He developed this thesis at length in his masterly *Logic.* He has recently strongly emphasized it in his Gifford Lectures.

VI. "Their truth or falsity is constituted by the issue."[21] Let it be said forthwith that this is not a characteristic of any judgment whatever. Here we have the prior dogma creeping in again. The judgment is thought of as remaining the same while its content or subject-matter goes on to completion, rendering the judgment true or false according to its issue. I have already made it clear that this is an unproved and unprovable assumption. One needs only to make an unprejudiced appeal to the man in the street, the favorite judge of pragmatists, to learn that the truth or falsity of such a judgment as "He had better consult a physician" does not depend upon the issue in any sense of the word. For every man in the street, who knows anything at all, knows that the truth or falsity of this judgment depends upon the actual state of the man's health at the time the judgment is made, together with a generalization from the experience of mankind to the effect that physicians are able to help men who are ill. All of this is a part of the content of the judgment—it is the ground which determines the truth or falsity of the judgment. If the man's health is bad he had better consult the best physician he knows and the statement is true. If his health is good there is no

[20] *Loc. cit.,* p. 340.
[21] *Loc. cit.,* p. 346.

need of his consulting a physician and the judgment is false. The truth or falsity depends upon the underlying ground, supposedly known by the one who makes the judgment. And this is true of all practical judgments.

The more one studies the examples given by Professor Dewey the more the conviction will grow upon him that they are all hypothetical or conditional judgments, although stated in a way which disguises this character. "He had better consult a physician" should be stated "If he is ill he had better consult a physician." If he wants such and such he had better do so and so, or it is more expedient, opportune, *etc.*, to do so and so. On careful examination the form of judgments of practise turns out to be, not a new form at all, but the old friend of logicians—the conditional form of judgment.

In disposing of the judgment of practise I have at the same time disposed of the value-judgment, since Professor Dewey admits that the latter is a species of the former. But there are two ambiguities in his discussion of this subject which should be briefly considered if this refutation is to be complete.

At the beginning of his discussion of the value-judgment Professor Dewey says: "The *experience* of a good and the *judgment* that something is a value of a certain kind and amount, have been almost inextricably confused."[22] And he goes somewhat into detail to prove that from Descartes on this has been the case. That this is an important distinction I am not disposed to deny, and I am mainly in agreement with his polemic against this vicious confusion. But what I can not understand is why Professor Dewey, a little further on, should make the identical confusion he here very properly condemns. He writes: "To judge value is to engage in instituting a determinate value where none is given."[23] But if we are to avoid begging the question as to the meaning of value, "to engage in instituting a determinate value where none is given" is the only meaning that the "experience of a good" can have. The experience of a good is identical with the experience which constitutes a value, and hence with what Professor Dewey calls "instituting a determinate value where none is given." But this is to judge value according to Professor Dewey. Consequently he is guilty of failing to hold fast to a distinction, the fundamental importance of which he himself admits.

Professor Dewey defines a value-judgment as one having goods and bads for its subject-matter. But a little further on he says that the good or bad in question (although he calls it the value in this context) is "not anything previously given, but is something to be given by future action."[24] And this is equivalent to a denial of the

[22] *Loc. cit.*, p. 349.
[23] *Loc. cit.*, p. 368.
[24] *Loc. cit.*, p. 361.

possibility of a value-judgment on the basis of Professor Dewey's own definition. For the value never comes into being until after the judgment, if it is something to be given by future action, and so the value-judgment can never have a determinate content or subject-matter. In that case only the judgment which has for its content the actually existing value could be called a value-judgment. But to say that the value in question is something to be given by future action precludes that possibility. According to Professor Dewey's own account of the matter a value-judgment would be a judgment without a content. And, to adapt a phrase of Meinong, such judgments belong to that class of objects of which it is true that they are not.

"The question is simply whether the nature of things can interest us for its own sake, apart from the concrete endeavor to transform our lives and their world. When once the conception of a world which possesses being beyond our own has distinguished itself from the tentative endeavor to supply our wants, it seems inevitable that we should be interested in such a world purely from the point of view of what it is, if only because we have the idea of it, which necessarily aspires to complete itself."[25] If these words could be written across the face of every treatise on pragmatism, I am persuaded that they would prove an unerring guide to the reader on his pilgrimage through the maze of that pathless wilderness. I do not say that pragmatism is a wilderness in the sense that it contains no truth, but that the reader will miss the full import of the truth it does contain if he have not such instruction for his interpreter.

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CONCERNING NOVELTIES IN LOGIC: A REPLY TO MR. ROBINSON

I AM indebted to Mr. Robinson's paper for an opportunity to clarify certain points in my treatment of practical judgments. Before coming to the specific matters wherein I hope to be able to clear up some misconceptions, I shall say a word about my reason for passing over most of the criticisms of Mr. Robinson. I find it impossible to join issues, as the lawyers say. Although Mr. Robinson is discussing alleged novelties, he resorts at many points to restating my positions in terms of older views to which he seems committed, and then condemning them because they do not conform. Let me point to a specific instance. I have spoken of practical judgments as entailing a change of the given, and claimed that the

[25] Bosanquet, *Principle of Individuality*, p. 53.

nature of the change is an essential ingredient of the practical judgment. Now, this may be right or wrong; that is a question of subject-matter. But Mr. Robinson (see p. 229) says this change is the movement toward logical consistency or stability, and this is identified with idealistic dialectic. Then, what won't fit into *this* identification is identified with "the evolutionary process" of Spencer. Now I submit that this mode of argument gets the inquiry not one whit forward. Recourse to authority not only begs, but befogs the issue—a still more serious objection. For the important consideration is whether some subject-matter has been passed over by the older views, and whether consideration of it would entail their revision. How confusing, accordingly, first to translate the position into the terms of the older views, and then condemn or approve according as it fits in! My love for novelty is not such that if I were merely engaged in restating Hegel or Spencer, severally or collectively, I should go at the restatement in such a roundabout manner.

Consider, again, the second general charge brought in his preliminary statement. He says he finds in my discussion the notion "that this [practical] form of judgment is to be determined solely by reference to subject-matter and content, and yet is to be recognized alongside of those which have been determined in an entirely different way." Not only is the confusion of Mr. Robinson's own making (since I hold that *all* differences of logical form are due to differences in type of subject-matter), but it well illustrates his reliance upon views which he already regards as authoritative. For he goes on to say that I presume "to ask those who have determined the forms of judgment by reference to degree of logical stability to include among the forms which they have so determined one which he [I] has [have] determined in an entirely different way. This is an unjust demand," *etc.* In point of fact, I have invited such as may be interested to inquire, first, whether the subject-matter of practical judgments does not involve an objective indeterminateness such that the judgment is itself a factor in its determination; and secondly, whether the result, if affirmative, does not entail modification of the views current regarding propositions of certain other subject-matters, notably those of observed data and of essences or natures. I can not imagine that my discussion has any interest for those who are already convinced that logical form and subject-matter or content are wholly independent of each other—unless, perchance, they are willing to reopen that question. The same prepossession would seem to be back of Mr. Robinson's feeling that if I don't use degrees of logical stability as a criterion for determining the forms of propositions, I must use degrees of practicality. Such a conception would be natural if I had

started from the acceptance of the authorities which Mr. Robinson accepts and then tried to restate them with some novelties of my own added. And when he regards me as merely translating his own conceptions into a different form, it is not surprising that he finds many ambiguities, misconceptions, and defects in clearness. But I was engaged in something more radical.

One more instance. He remarks that I must learn to realize the unimportance of time. As to begging the question—nothing remains to be said. Since the incomplete and hence inadequate nature of the subject-matter at a *given* time is taken as the distinctive trait which determines a special type of judgment, I hardly see why anybody who is already convinced that time is merely phenomenal or subjective or that, logically speaking, future time is already all in, should bother to discuss my view. As to befogging the issue, putting my views as they would be if they were translated into what Mr. Robinson believes leads him to think that the time in question is the time taken by thinking. Since my conception, however unworthy, is my own, I naturally dislike seeing it mangled. So I'll say that, put in terms of my own doctrine instead of in those of the authorities into which it has been translated, the time in question is the time occupied by certain changes in the world. That it is judged profitable to buy certain bonds means that a certain existential change—acquiring profit—will accrue from certain movements going on in the market if these changes are acted upon in a certain way. The time which *I* may occupy in arriving at this proposition has nothing to do with the position taken.

When, however, one does appeal to authority, one's citation should at least be correct. Mr. Robinson is justified in his wonder that I made no reference to Aristotle as the great outstanding exception to my statement that practical judgments have been usually neglected. But his implication that Aristotle had not given them a distinctive logical character of their own is opposed, of course, to the facts. I had supposed it was rudimentary that Aristotle made a sharp division of syllogisms into demonstrative and dialectical, and that practical syllogisms fall in the latter class. I had supposed it equally elementary that this distinction went with his distinction of subject-matter with respect to potentiality and contingency and necessity and actuality, which in turn coincides with the rôle played in *subject-matter* by time. For Aristotle also was one who needed to learn that lesson of the unimportance of time which Mr. Robinson, *via* Mr. Russell, would have me learn. As matter of fact, Aristotle goes further than I went, because he introduces the indeterminateness of the future into the subject-matter of all propositions about an *event* in the future, and introduces it in such a way as to

affect, crucially, the logical character of any judgment about it.[1] And coming specifically to the subject of practical judgments, Aristotle not only holds that they are by their nature judgments of the individual, not of the universal (so that no demonstration is possible as regards them), but he also makes a sharp distinction between the theoretical and the practical judgment of the individual. The former consists in the actualization of the potentiality of a sense-organ through the corresponding actualization already existing, and hence is always infallible or true with respect to its appropriate subject-matter; while the judgment of the practical individual depends upon habits or dispositions formed in prior exercise and practise. Hence they may be either right or wrong, and more likely to be correct in the degree in which they are the propositions of one who has already a good character. It is interesting to note that Aristotle uniformly makes observance of the distinctions of methods which are appropriate to different subject-matters the test and mark of an "educated" person.[2]

I regret to say that when I have eliminated the portions of Mr. Robinson's article which seem to me to be based upon translating my discussion into other notions and then pointing out the inconsistencies which result, I do not find as many points left as I should be glad to find. I do find, however, matters where the criticisms he has made may, I hope, enable me to clear up some points which need clearing up. The first one of the preliminary criticisms of Mr. Robinson is of such a nature. There *is* danger of serious ambiguity in discussing practical judgments as a distinctive type and also intimating that in some sense all judgments may be practical, and I did not sufficiently develop my remarks to safeguard them from this ambiguity. It may, however, easily be removed by noting the difference which exists between judgments where something to be done constitutes the express or *explicit* subject-matter, and judgments whose explicit content is descriptive or essential and which nevertheless have a practical *reference*. A proposition, that it is better for the country to have President Wilson reelected as president, is one of the former type. That President Wilson relied upon the use of diplomatic notes, is one of the latter sort; although a judgment about a fact (something already done) its point lies in its bearing upon the first proposition. Now there are questions of fact involved in these statements. I may be all wrong in thinking that there is any distinctive explicit subject-matter of *agenda;* I may be wholly wrong in thinking that

[1] See *De Interpretatione,* Ch. 9. I have italicized the word event to exclude mathematical subject-matter and that relating to the first heavens, *etc.* where nothing, strictly speaking, happens.

[2] *Ethics,* Bk. 1, Ch. 3; *Parts of Animals,* Bk. 1, Ch. 1; *Metaphysics,* Bk. IV., Ch. 4.

historical and essential judgments become intelligible and explicable only when looked upon as having a reference, however indirect, to practical judgments. But a little more care in statement on my part would, I am sure, have made it evident that there is no logical ambiguity or inconsistency involved.

Another point concerns the alleged twofold use of the term judgment—as meaning both the "act of an agent" and the "transformation of the given." While I am unable to plead guilty of carelessness in this case, the point is so important that I am glad to have an opportunity to discuss it further. Mr. Robinson says that I can not mean anything when I speak about a proposition being a factor in the completion of the situation which is its own subject-matter except an act of decision about a course to pursue in a determinate situation.[3] Nothing is commoner (whether this is what is implied by Mr. Robinson or not) than supposing that deliberation is merely judging about what a ready-made agent is to do in abstraction from—or to the neglect of—judgment of subject-matter existing independent of the agent. My argument will not be understood unless it is recognized that precisely this assumption is called in question. I have claimed that no judgment as to the act to be done by the agent is possible by itself: that a proposition about the course of action to pursue (the proposition in which a deliberative decision is embodied) is always a judgment as to the course which an objective subject-matter may take, a judgment as to changes made possible by changes that are going on independent of the agent. For example, the proposition about buying bonds is a judgment of a change (added pecuniary resources) which is made possible by certain independent changes (industrial developments, acts of other investors, *etc.*) which are still occurring and therefore are now incomplete and indeterminate. *Therefore* the judgment is itself a factor in the completion of the situation, and *therefore* also it is, in its entirety, a transformation of the given. Instead of these two expressions standing for two different things, they are two ways of saying the same thing. The proposition that the situation-in-change admits (or requires) a certain other change is a factor in accomplishing the change. It is, by the same token, a logically complete proposition only when, through it as a factor, the indeterminate situation is determined in a definite way—to the outcome of profit or loss. If Mr. Robinson had not been so sure what I *must* mean by "transformation of the given," namely, just what he, as an adherent of the idealistic dialectic, means; if he had taken this to be a genuine change in existence effected by the interaction of

[3] I find some difficulty in adapting my discussion to Mr. Robinson's here, because he at once proceeds to a discussion of an alleged confusion on my part between judgment and *a* judgment which he evidently feels, for some reason which I am unable to follow, to be connected with the ambiguity above mentioned.

changes which enter into the subject-matter of judgment, he might have found my doctrine even more absurd in point of fact than he does find it. But he would not have found the particular difficulty which he has expressed.[4]

When I spoke of the seeming paradox of a judgment whose proper subject-matter is its own determinate formation I had in mind in terming it a paradox, some of the difficulties which Mr. Robinson raises in connection with the singleness and plurality of judgments. I still feel the difficulties so far as language is concerned, but I do not think they exist in fact. We can not talk or write except in determinate terms if we are to talk or write intelligibly. Any one who believes in the existentially incomplete and indeterminate will therefore always be at a disadvantage so far as linguistic expression is concerned. Just because what he is talking of is indeterminate it is not capable of definite statement. All that one can do is to invite attention to a certain situation. If the invitation is not accepted, words will be meaningless. Take the instance of "He had better consult a phsyician." Mr. Robinson says it can not be *a* judgment; for it can "only be one stage of the process of the transformation of the given."[5] This is quite true. It can not be a complete or single judgment. This is just the point I was trying to make, although unfortunately I did not put it into such bald terms as I am now doing. Since it forms a judgment which is *logically* complete only when the situation has undergone transformation, it is only a constituent of judgment, not *a* (complete) judgment. Whatever criticisms may be made of my inconsistency in referring to it as a judgment (and I willingly accept criticisms from all who have never felt the need of using language as an invitation to perform an experiment) it is more profitable to consider what is meant by calling it *logically* incomplete. Let us take some of Mr. Robinson's statements in illustration. He says (p. 236) that the judgment "He had better consult a physician" is "our old friend" the conditional or hypothetical judgment, signifying "If he is ill, he had better consult a physician." Since he also says that the truth or falsity of the judgment about what better be done depends upon "the actual state of the

[4] The failure of Mr. Robinson to get my point is seen in his language. He says I sometimes seem "to mean by judgment the psychical act of an *agent* reaching a decision relative to the course of action to pursue in a *determinate* situation" (italics mine). This makes nonsense of my argument, which was that the situation is *not* determinate and there *is* no agent—no determinate agent—until there is a judgment as to the possible determination of an indeterminate situation.

[5] I have omitted the words following "given," namely, the words "into a completed act." For they involve just that misconception of my position with which I have just dealt, namely, the supposition that the judgment of an act can be separated from the judgment of the interaction of certain independent changes.

man's health at the time" he can not, however, possibly mean that this conditional statement *exhausts* the logical content of the proposition about seeing the physician. There must also be the judgment, "He is ill."

Note how this resolution into prior determinate hypothetical and categorical judgments assumes just the questions raised by me. To Mr. Robinson the whole matter is already settled; there is nothing uncertain or indeterminate about it. If I were to retort that the man is uncertain whether or no he is ill, and that accordingly the proposition can not be resolved into the two propositions, hypothetical and categorical, into which Mr. Robinson resolves it, he has an easy rejoinder. He can say that there is a generalization already established to the effect, "If in doubt, consult a physician," and that it is also a foregone conclusion that the person is in doubt. But this restatement may perhaps serve to make the matter a little less cut and dried than it is to Mr. Robinson. What about the cases when the generalization is still in course of establishing? Was the rule "Consult the medicine-man of the tribe" of equal validity? Is there any universal proposition to consult a physician if in doubt? Is there not an opposite hypothetical proposition: "Keep away from doctors and drugs?"

My concern is not to demand any particular answer to the questions just raised. It is to indicate the radically different turn the points at issue take in their own environing atmosphere from that which they assume when translated into the conceptions congenial to Mr. Robinson's mode of thought. I am arguing as to the peculiar character of practical judgments on the ground that since they arise in an indeterminate and uncertain situation, they serve as factors in giving that uncertain situation a specific termination—about which a complete judgment may then be passed. Mr. Robinson replies that my view of practical judgment is wrong because the subject-matter of what is to be done is already logically determinate—obviously just the matter upon which the whole discussion turns.

In the case just taken, Mr. Robinson's side of the case is at a certain advantage as to the facts involved, because the course of action in such cases has become largely conventionalized or habitual.[6] Let us, however, suppose the subject-matter to be a complicated disease

[6] Mr. Robinson has passed over entirely my contention that in such cases there *are* no propositions at all; there are adequate stimuli and *action* follows. As I am anxious to get the issue joined let me repeat what I have said many times before. These propositions about being ill, about the consultation of a physician, *etc.*, are now made by Mr. Robinson and myself, precisely because there is some uncertain subject-matter and are made for the sake of settling that subject-matter. If Mr. Robinson was not uncertain himself, he nevertheless assumed an existential situation in which *I* was guilty of ambiguity and in which others might fall into the same uncertainty. This expresses my whole case in a nutshell. I

and the proposition that of the physician. In such a case, is it so certain that the rule or universal, the hypothetical proposition is already given? And granting that there are facts in the case which, *if known,* would form the settled content of a categorical judgment (such as "He is suffering from infantile paralysis,") is it not obvious that the case may be such that the relevant data *can* be known only in consequence of an act involving a tentative judgment as to what it is best to do? I suggest two cases even more crucial for the inquiry. (1) What is the logical nature of experimentation? Is it of logical significance at all? Is there any logical significance in the fact that modern inquiry, so far as concerns all natural science, is committed to employing activity (physical activity in changing conditions) and employing propositions about the kind of activity to pursue, as conditions of propositions about universals and about relevant data and facts? (2) Is moral perplexity genuine, or is it *merely* psychical? Does its conclusion in act really modify anything in existence, and is the nature of the modification (consequences) to accrue itself a relevant consideration in the subject-matter of the decision? A discussion of these two questions would serve to join issues.

Mr. Robinson's discussion regarding the possibility of a single judgment as to a developing content indicates that the text would have been clearer if at every point, instead of only occasionally, I had been explicit in making use of the terms incomplete and complete judgment. A considerable portion of his criticism falls to the ground the moment that distinction is introduced. The incomplete or tentative judgment is a factor logically required in constituting the change which alone makes possible a complete judgment. This doctrine may be false; I can not see any particular difficulty as to its intelligibility. Over and above any verbal matter, I am not sure how far Mr. Robinson means to deny continuity as to subject-matter and propositions. In all probability my language would have been clearer in certain places if I had spoken of a judgment system, or a complex of judgments continuous with one another because of continuity of subject-matter. But in some places, Mr. Robinson seems to go much further. He says, for example, that "the subject-matter of every judgment is as complete as that judgment requires." I do not see how anybody who says that can talk intelligibly about a judgment remaining the same while *its* content develops. How can there be any development of content on such a basis? Probably I do not understand Mr. Robinson here, but his language sounds like an attempt to unite the developmental theory of judgment characteristic

should welcome heartily any discussion which reconciles the attempt to remove ambiguity with the implication that ambiguity does not exist, or that if it does exist, propositions about it are in no way factors in the resolution of the ambiguous situation.

of idealistic dialectic with the atomistic pluralism of neo-realism—a somewhat precarious undertaking, I should suppose.

About the final special points of Mr. Robinson's paper, I shall say only a word. His whole discussion is aside from the point, because, governed by the notion that my statements under six heads, about practical propositions is a statement of "six ways in which their content is supposed to differ from that of ordinary theoretical judgments." Consequently, he thinks a quietus is given to the whole conception when it is pointed out that five of these traits are not peculiar traits of practical judgment. If the reader will be good enough to turn to my text, he will perceive that the six numbered propositions have to do wholly with an independent analysis of the nature of the form of practical judgments as determined by their subject-matter.[7] The question of likeness or unlikeness to features of ordinary theoretical judgments is *not* the topic. So far, indeed, as identity can be shown, that identity, instead of putting a quietus on my theory, strengthens the presumption that judgments that are theoretical in explicit content are practical in reference. This point comes out most clearly perhaps in reference to the fifth point where Mr. Robinson points out that Mr. Bosanquet had already shown that factuality and hypotheticalness are present in all judgements. Precisely. For the universal is, indirectly when not directly, a statement of a method of action (comprising, as I have tried to show in the case of essential definitions, a method of inferring) while the factual concerns the given conditions which have to be reckoned with. As a matter of personal history, this feature of the idealistic logic (particularly as exemplified in Dr. Bosanquet), since it was left wholly unexplained empirically, was a considerable factor in leading me to the conception of the ultimate practical reference of all judgments.[8]

COLUMBIA UNIVERSITY. JOHN DEWEY.

[7] One citation will show completely Mr. Robinson was misled by this misconception. After quoting from me the first point regarding the incomplete situation as supplying the subject-matter of practical judgment, he says I nullify that statement as a statement of unique quality when I go on, under the second head, to show that unfinishedness of subject-matter is also a characteristic of certain contingent theoretical propositions. As matter of fact, since I was engaged in an analysis of practical judgments on their own account, the series of propositions made by me is cumulative. The second shows that the first has to be further qualified before it can be accepted as adequately assigning a special mark.

[8] I may say the same—in much less degree—of Mr. Bradley's discussion of the practical nature of judgment to which Mr. Robinson refers all of us who remain unenlightened pragmatists. If I shared Mr. Bain's conception of the nature of act and of thought I should have been convinced by Mr. Bradley's statement. As matter of fact, his treatment made me even more conscious than I had been before of the defects of Bain's conception of thought and action, and hence more explicitly aware of a conception of their relationship wholly untouched by Mr. Bradley.

REVIEWS AND ABSTRACTS OF LITERATURE

Essays in Experimental Logic. JOHN DEWEY. Chicago: University of Chicago Press. 1916. Pp. vii + 444.

The essays brought together in this volume are the four essays originally appearing in the *Studies in Logical Theory* (1903) "with editorial revisions, mostly omissions," and other studies "in part reprinted and in part rewritten, with additions." These latter include "Some Stages of Logical Thought," written before the *Studies in Logical Theory,* "The Logical Character of Ideas," "The Control of Ideas by Facts," "Naïve Realism *versus* Representative Realism," "Epistemological Realism: The Alleged Ubiquity of the Knowledge Relation," "The Existence of the World as a Logical Problem," "What Pragmatism Means by Practical," "An Added Note as to the Practical," "The Logic of Judgments of Practise," and an "Introduction," especially written for the volume. This "Introduction" comprises about one sixth of the whole.

The fact that the edition of the *Studies* has been exhausted seems to have been the occasion that led, happily, to the bringing together of these studies of Professor Dewey's that would otherwise have remained comparatively inaccessible in the files of technical periodicals. Together, they furnish a basis for the study of the most profound working out that pragmatism as a philosophy has yet had, and to the historian there is the added interest of observing the ripening, through more than thirteen years, of thought that was at least enigmatical to those of professional philosophic training at the time when the nucleal studies first appeared. Unfortunately the author has seen fit to omit from the republished studies references to the dates and places of their original publication.

In the later writings the terminology seems somewhat softened, although the term "experience" as here used will still be a stumbling-block to some, but the development of and interest in behavioristic psychology has done much to illuminate the author's point of view. If the reader turns from the review of James's *Pragmatism,* "What Pragmatism Means by Practical," to the essay on the "Logic of Judgments of Practise," he can not fail to be impressed with the sure touch and the increased breadth of analysis of the latter. Whereas at first Professor Dewey seems "to grope about an idea and feel of it on all sides," to parody an expression of his own, he now turns on the searchlight and boldly walks around it, taking flashlights or making maps and drawings as the occasion requires.

What Professor Dewey's critics need to dwell upon is his psychology, the psychology of behaviorism. With this psychology his thought stands or falls. If we once grant that sensations "are not

elements out of which perceptions are composed, constituted, or constructed," but that "they are the finest, most carefully discriminated objects of perception" (p. 404) the rest follows inevitably as we read on in the language of facts. On this basis the puzzles of subjectivism are gone, for while we have the individualism that is the result of differently constituted organisms responding differently to the same external situation, there is no more mystery, privacy, or subjectivity in the fact than in the case where different makes of golf-balls respond differently to similar strokes. It is the earnest hope of the reviewer that these and sundry other problems (?) may soon vanish from philosophic writing, especially the "bent stick" (pp. 396–97), concerning which Professor Dewey's interpretation seems adequate and final until his psychology is demonstrated false. *Absit omen.*

The first and hitherto unpublished part of the book begins with an emphasis of the temporal development of experience and a distinction between its reflectional and non-reflectional types (pp. 1–8). There follows a condensed exposition of the process of thinking, as set forth in *How We Think,* in which is included the illuminating comment that "Thinking gets no farther, as *thinking,* than a statement of elements constituting the difficulty at hand and a statement —a propounding, a proposition—of a method for resolving them" (p. 13). To get knowledge this must be tried out and if the required organization is effected, the results of the thinking become knowledge (pp. 8–18). The next two sections consist of a careful exposition of the contrast between the concept of logic here developed and that of idealism and of the new realism (pp. 18–35). Realism then comes in for careful criticism, but the author's own view gets much incidental clarification with respect to the nature of *abstractions,* as something "really there," and *data,* as materials extracted for the purpose of guiding inference (pp. 35–46). *Meanings* are given a much more thorough analysis than in the author's previous writings, not only in their objectivity, but in their functioning. This leads to some admirable suggestions as to the nature of words (p. 51), the instrumental interpretation of deduction (p. 53), and the philosophy of mathematics (p. 55) (pp. 46–61). The final section recurs to the significance of the term experience in the history of philosophy as "coincident with the emancipation of science from occult essences and causes, and with the substitution of methods of observation, controlled by experimentation and employing mathematical considerations, for methods of mere dialectic definition and classification." It is also significant from the close association made between the ideal and the scientific that: "If philosophers could aid in making it clear to a troubled humanity that ideals are continuous with natural events, that they but represent their possibilities, and that recognized possi-

bilities form methods for a conduct which may realize them in fact, philosophers would enforce the sense of a social calling and responsibility" (pp. 61–74).

As is inevitable in a book of this sort, there is much repetition, and the reviewer can not conceal a sense of regret that the many topics suggestively touched in the introduction could not have been expanded to form the content of the book in place of all but the last of the reprinted essays. However, to have as much material as is here brought together in a single volume from such a thinker as Professor Dewey should be no slight stimulus to American philosophy.

HAROLD CHAPMAN BROWN.

STANFORD UNIVERSITY.

The Theory of Abstract Ethics. THOMAS WHITTAKER. Cambridge: The University Press. 1916. Pp. viii + 126.

This little volume, which is quite as abstract (and dry) as the title suggests, advocates a mildly modified Kantianism in ethics. The author considers the fundamental achievement in that discipline to have been the substitution of the formal for the teleological point of view. The beginnings of this revolution he finds in Hobbes's *De Cive;* Kant was its protagonist; Renouvier made some contribution; and Juvalta has cleared up most of the remaining difficulties. An extended outline is given of Juvalta's *Il Vecchio e il Nuovo Problema della Morale;* to the ethical doctrine there defended our author has little to add. He calls it "rationalism modified by contact with empirical theories of ethics" (p. 66).

"What we have to determine primarily," the author agrees, "is not the good that is to be the end of action . . . but the moral law to which actions ought to conform. This moral law is not a deduction from any end, but is valid simply as law" (p. 29). His own proposal is to give to the logic of conduct deducible from this abstract moral law the name abstract ethics. Beyond its sphere there is the whole realm of ends properly pursued by men. "Concrete or applied ethics is concerned with the pursuit of good when it comes into contact with the principles of abstract ethics. By this division the defects both of the purely *a priori* and of the purely *a posteriori* systems are avoided" (p. 37).

Three arguments against teleological ethics are offered. First, we can never know the total consequences of an action, hence we can never, on teleological principles, know what is right. But we do know what is right in most cases. Therefore, the teleological explanation is inadequate. Secondly, "from the point of view of the ethics of law (to reject which would be to beg the question), since

the universe includes persons, its total good can not be determined apart from ultimately just relations among persons. The law, therefore, even in the mind of omniscience is not wholly derivative from an end that does not include it" (p. 32). Thirdly, there is "a stringency in certain ethical judgments that never seems derivable even from our own most decisive estimates of goods" (p. 32). So "the *a priori* element in ethics is inexpugnable" (p. 34).

On the other hand, we must recognize, with Juvalta, the empirical character of all ends, the pursuit of which makes up the (non-moral) Art of Life. *A priori* ethics alone gives insufficient guidance toward human good. "What utilitarians can not get out of their ends is stringent obligation. What rationalists can not get out of their forms or laws is any actual end to be pursued. Now here, I think, comes in the reconciliation. Just because the ends are not in themselves obligatory, while yet all the content of human life depends on them, there is room for the selection of different ends. But, while these are not pointed out by the moral law, the moral law assigns limiting conditions of their pursuit. It is at certain critical points, where these conditions are definitely in question, that strictly moral choice occurs" (p. 35). Thus the great bulk of human life is outside of morality, and there are left "relatively few cases distinctively cases of moral conscience" (p. 36).

The obvious objections and questions from the teleological or biological moralists are not considered; and there is little else in this slim volume than the reiteration of the position thus summarized, together with comments upon past systems. We may note, however, his insistence upon epistemological and metaphysical (of some sort) idealism, his argument (tediously familiar) for God, in the concluding chapter ("The existence of inexpugnable *a priori* elements in moral as in natural science entitles us to assert, since nothing comes from nothing, that not only reason, but justice in some sense is a pre-existent reality ordering the constitution of the whole that is partly known to us in the world and in man" (p. 123)), and an interesting hint, at the very end, of a doctrine of reincarnation. There is also a, perhaps, pardonable thrust at Prussian militarism, which may be more of a *leit-motif* than appears on the surface, as the following quotation from another context suggests: "No doctrine of the good, however elevated, can, in the absence of *a priori* principles of justice, make liberty secure" (p. 93).

DURANT DRAKE.

VASSAR COLLEGE.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. September, 1916. *Nature, Reason, and the Limits of State Authority* (pp. 645–661): EDMUND H. HOLLANDS.—Hegel's doctrine of the absolute state is the animating spirit of German politics. The logical deduction of this doctrine has been taken to imply the non-existence of international law. The view here expressed is that such a deduction is inconsistent with Hegel's own philosophy and is contrary to the facts of the moral life. There follows an enumeration of the interests which transcend the limits of the state. *Liberty and the Social System* (pp. 662–675): GEORGE H. SABINE.—"The purpose of this paper is to discuss the revision of political philosophy which has been undertaken as a part of the work of English idealism. This revision claims to be not only a more adequate statement of social theory, but also to give a sound theoretical basis for political liberalism." *Conscience as Reason and as Emotion* (pp. 676–691): WILLIAM K. WRIGHT.—"My endeavor will merely be to show how it is possible in the study of systematic ethics to agree with thinkers of Dr. Rashdall's type that conscience is rational and objective and yet to accept and profit greatly by evolutionary analyses in the manner of McDougall and Westermarck." *Hume's Relation to Malebranche* (pp. 692–710): CARLL WHITMAN DOXSEE.—Hume and Malebranche, though empiricist and rationalist, respectively, teach identical doctrines on the subjects of (*a*) causation, (*b*) the knowability of the self, and (*c*) natural belief. No attempt is made to decide the question of the influence of Malebranche on Hume. *Discussion: Dr. Bosanquet's Doctrine of Freedom* (pp. 711–730): GERTRUDE C. BUSSEY and MARION D. CRANE.—A discussion touching the compatibility of Dr. Bosanquet's absolutism with freedom. *Reviews of Books:* Clement C. J. Webb, *Studies in the History of Natural Theology:* H. N. GARDNER. John Dewey, *Democracy and Education:* J. E. CREIGHTON. *Notices of New Books. Summaries of Articles. Notes.*

THE JOURNAL OF ABNORMAL PSYCHOLOGY. October–November, 1916. *Persistent Complexes derived through Free Associations: Miss Z's Case* (pp. 215–257): C. S. YOAKUM and MARY C. HILL.—Miss Z memorized letters by means of stories, for which the letters served as sort of outline or framework. Analysis was carried on and reported. *The Developmental Psychology of Stuttering* (pp. 258–264): WALTER B. SWIFT.—Paper presented to offer an illustration of our method of revising, remodeling, remarking the mental process, visualization. In very brief form a complete, automatic, visualization process may be developed by vocal drill in cases

where previously there was total absence of all these visualization processes during speech. *Some Psychoanalytic Studies of Character* (pp. 265–274): L. E. EMERSON.—The author claims he has gained through psychoanalysis an insight into human character never before possible. *Reviews:* Boris Sidis, The Causation and Treatment of Psychopathic Diseases: MEYER SOLOMON. C. G. Jung, Psychology of the Unconscious (translated by Beatrice M. Hinkle): MEYER SOLOMON. Henry Fairfield Osborn, The Men of the Old Stone Age: ISADOR H. CORIAT. *Books Received.*

Forbes, Waldo E. Cycles of Personal Belief. Boston and New York: Houghton Mifflin Company. 1917. Pp. vi + 150. $1.25.

Hall, G. Stanley. Jesus, the Christ, in the Light of Psychology. 2 Vols. New York: Doubleday, Page, and Company. 1917. Pp. xix + 733. $7.50.

Melville, Norbert J. Standard Method of Testing Juvenile Mentality by the Binet-Simon Scale with the Original Questions, Pictures, and Drawings. Philadelphia and London: J. B. Lippincott Company. 1917. Pp. xi + 142. $2.00.

Northrup, Edwin F. Laws of Physical Science: A Reference Book. Philadelphia and London: J. B. Lippincott Company. 1917. Pp. vii + 210. $2.00.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held in London, on February 5, 1917, D. H. Wildon Carr, president, in the chair. Mr. F. C. Bartlett read a paper on "Valuation and Existence." The early stages of the act of valuing are marked by the attitudes: (1) there is contentment, and (2) it is liked. The feeling which is present in both of these instances can not be identified with any so-called "judgment-feeling," for it contains psychologically no element of direction upon an object. In both cases, however, "preferential treatment," which is at the basis of the whole development of valuation, is illustrated. Here there is neither assertion nor assumption of existence. In developed life value is definitely attributed to a clearly discriminated object. In the case of esthetic value, no consideration of the existence or reality of the object has any relevance; economic values may indirectly refer to existence; moral values are passed solely upon acts considered as performed, and assume existence only if acts are to be regarded as existing. As for "value itself," this is merely a name for some specific kind of value.

In all instances it appears to be required, for the constitution of value, that something possessing qualities should enter into relations with a subject. Of any whole, therefore, to which "value itself" refers, it is pointless to predicate existence.

UNDER the joint editorship of G. Stanley Hall, John Wallace Baird, and L. R. Geissler the *Journal of Applied Psychology* was launched in March. It is to be published quarterly in March, June, September, and December and will have the assistance of a large board of cooperating editors. Its field will include the following: The application of psychology to vocational activities; studies of individual mentalities; the influence of general environmental conditions; the psychology of every-day activity. Each issue will contain about 100 pages and the subscription price is $4.00 per year or $1.25 per copy.

THE library of the late Professor Hugo Münsterberg has been given to Harvard University by a group of his friends. The library consists of about 10,000 books, reprints, pamphlets, manuscripts, charts, and other papers. Among the 3,000 books in the collection are the latest and most valuable ones on experimental and applied psychology, especially those bearing on phases of the subject to which Professor Münsterberg devoted his time.

DR. WARNER FITE, professor of ethics at Princeton University, has completed a series of four public lectures at Teachers College, Columbia University, on the general topic, "Democracy and Efficient Citizenship." The titles of the individual lectures follow: "The Moral Basis of Democracy"; "Freedom and Discipline"; "Democratic Order and Efficiency"; "Democracy and Patriotism."

PROFESSOR HENRI BERGSON lectured in New York City under the auspices of the American Academy of Arts and Letters on March 8. His subject was "France and the War."

THE REVEREND BROTHER CHRYSOSTOM (Joseph J. Conlen), professor of philosophy and psychology at Manhattan College, died on January 24.

DR. C. E. FERREE, of Bryn Mawr College, has been advanced to the grade of professor of experimental psychology.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

A DEFENSE OF DUALISTIC REALISM[1]

THE dualistic view which I shall try to defend maintains that consciousness and the world of physical objects in space are essentially different from each other in kind; and that the psychical may be defined as consisting of non-physical entities which, though they may be spatial, are not in space, and which exist only as functions of one or more individual persons or organisms. This view is so simple and so commonly held that it needs little elucidation. It involves two factors, namely, an empirical view of the make-up of consciousness, and the double thesis that there is a real, three-dimensional space, common to different minds, and that consciousness is not in this space, but is only and always the function of persons or organisms. I make no claim to any intuitive knowledge that consciousness is not in space. I maintain merely that the complex facts of human experience, which no one does or can deny, are such that the dualistic hypothesis is by far the simplest and most natural. No other theory, as it seems to me, can explain so easily the various characteristics of knowledge, perception, illusion, and error. This is a subject to which I shall return later on in this paper.

By the other factor of the dualist theory to which I referred above —its empirical view of the make-up of consciousness—I mean merely the fact that dualism has no *a priori* theory of the nature of the psychical, but takes consciousness to be whatever it finds it. Thus it does not feel bound to defend any theory of the self nor to maintain the existence of a conscious stuff or consciousness-in-general. Consciousness for it is what introspective psychology shall find it to be. In other words, it is to be identified with what is commonly known as conscious *content*. Part of this content is peculiarly subjective, part of it is comparatively objective in nature. It has both secondary and primary qualities. Most of it, perhaps, has no spatial characteristics, but some of it—notably visual and tactual percepts—is obviously spatial. And to the dualist this empirical observation is in

[1] Read at the meeting of the American Philosophical Association in New York, December, 1916.

no way inconsistent with the thesis that consciousness—even spatial consciousness—is not *in* the common Euclidian space of the physical world. That this should seem to some a difficult conception is due merely to the fact that one seldom hears it expressed. Few people will find it hard to conceive of an olfactory sensation or a mental concept of a triangle as being extra spatial; and the dualist merely points out that there is really no more difficulty in supposing the percept of a triangle to be out of space—*i. e.*, out of the objective space of the physical world—than in accepting the same characteristic of the concept or of the odor.

But although the dualist insists that our knowledge of the physical world is mediate, he is very far from considering it unreal. He is by no means an advocate of agnosticism or mystery. The situation is simply this: Each one of us finds himself the center of a flux of experiences, varying in impermanence and durability, some of them seemingly caused by one's own efforts, most of them seemingly forced upon one from the not-self. Each of us, moreover, believes that there are many other centers of experience like himself, and proceeds to communicate with these other centers or selves. How are these various facts to be put together? Several hypotheses are possible here as in most cases where we attempt to give a scientific ordering to a mass of experienced facts. Just as the facts of the starry heavens may be ordered by means either of the Copernican or the Ptolomaic hypothesis, so the facts of my experience as a whole may conceivably be accounted for by a realistic, idealistic, or even a solipsistic epistemology. As is the case in the other sciences, if a given theory can not be made to account for all the facts it must be laid aside, while the choice between the remaining hypotheses must be based on simplicity, ease, naturalness. Now the dualist does not claim that his view is the only thinkable one or the only one that can be made consistent with admitted facts; he insists merely that it is the most natural and by far the simplest way of ordering our experience.

A very strange and interesting criticism upon dualism, frequently heard from idealists and pan-objectivists alike, is that it seeks to crowd all the rich variety of this world into only two categories. I have called this criticism strange and interesting because of its source—coming as it does from those who would crowd all the rich variety of this world into one category. Now the dualist, as I understand him, is no worshiper of abstract duality. He has never for a moment doubted that this world is full of a number of things. And not only can he find room within his physical and mental realms for all the different kinds of reality that the physical and mental sciences can discover: he is willing to grant the new logicians a separate sphere for their concepts and orders, and he has no veto for those

who would propose additional spheres of reality. All that he is interested in is the preservation of the sharp distinction between the mental and the physical. On the question whether or not there are other distinctions in the universe of being equally sharp he is not called upon to take sides.

The remaining criticisms of dualism commonly met with may, perhaps, be summed up under two related heads: (1) dualism involves transcendence; (2) it shuts the mind up to its "ideas" and thus makes knowledge only inferential and mediate. In a recent paper[2] I tried to show that our "ideas," far from forming our prison-house, are in fact our means of knowing the outer world. We do not see our percepts or know our ideas; we see and know by means of them. To seek to free us from them is in effect a demand that we shall perceive without perceptions and think without thoughts. It must, of course, be admitted that the dualistic view does involve both transcendence and inferential knowledge. But it must also be remembered that every other form of epistemology which would avoid solipsism has to make use of both these things. For my knowledge of your thought, in whatever epistemological view one may select, is surely neither immanent nor immediate. Nor can it be successfully maintained—though the attempt is often made—that on the dualistic view the mental and the physical can never affect each other in any way. For the question at once presents itself: Why can they not? Why should the fact of their difference prevent their mutual influence and interaction? To argue that only like can act upon like is an astonishing piece of dogmatic rationalism, and strikingly suggests the fifth century, B. C. Whether or not two things as unlike as the dualistic mind and body can act upon each other is exactly a question for experience to decide. And if we go to experience with no preconceived theory to defend, we shall, to say the least, find nothing to refute the dualistic hypothesis. The case for dualism would therefore seem, on the surface, rather good; and especially so when we remember that it has been the doctrine of the majority of philosophers through all the history of thought, and that it is to-day the starting-point of nearly all scientists. Pretty plainly, therefore, the burden of proof would seem to rest not upon it, but upon its opponents.

Since the dualist seeks to define the psychical by means of its anthesis to the physical, it seems necessary to say a word first of all in defense of the independent existence of the physical. That word, however, must be very brief; and in fact I shall merely outline the method of defense which, in my opinion, the dualist should attempt against the attacks of idealism. The idealistic argument against the

[2] "The Confessions of an Old Realist," this JOURNAL, Vol. XIII., p. 687.

independent reality of the physical, as I understand it, might be reduced to two main contentions: (1) That such a reality is unthinkable; (2) that even were it thinkable and real, it would be separated from us by a chasm, and that hence knowledge of it would be impossible. In answer to the first of these assertions, the dualist might very well maintain that there is nothing unthinkable in the real existence of an objective, three-dimensional space possessing the characteristics described by Euclid, and that once this is granted, the existence of unconscious, unperceived physical objects occupying that space is perfectly conceivable. In answer to the idealist's second objection, the dualist may reply that there is no reason why such a physical world should not affect our minds in such a way as to make inferential and mediate, but real knowledge perfectly possible; and as for the chasm, it is really no greater for the dualist than it is for every idealist who will not consent to be a solipsist. This criticism, of course, applies chiefly to the various extensions of subjectivism, such as the Berkeleyan and Roycean, rather than to objective idealism. As to the latter I can only wonder whether it really differs from realism in anything but name. In name, indeed, the two are removed from each other as the east is from the west. But the far east becomes the far west if you go far enough; and the "experience" of objective idealism, on close examination, has an uncanny likeness to the "neutral entities" of the new realism. The world of the objective idealist is really the world of Holt and Perry all over again, only with a different set of labels. And why it should be worth anyone's while to contend so stoutly over a label is one of the mysteries to which the dualist has no clue.

I am inclined to think that the idealist's attack is by far the most dangerous that the dualist has to meet. Yet as our discussion centers chiefly about the psychical, most of my time will have to be spent in dealing with the views of those who would interpret the psychical in terms of the physical, or transform both into a psychophysical continuum. This latter, as we all know, is the attempt of Professor Hollingworth. And as his position is one of the few that has not been already thoroughly examined by defenders of dualism, I shall devote to it more of my precious twenty minutes than I can perhaps rightly afford. Basing his conclusions in large part upon laboratory observations, Professor Hollingworth maintains that "feeling," "judging," "believing," and "perceiving" do not differ qualitatively, but, as he puts it, "statistically." "They are distinguished from each other only by the universality of their verdicts." And the qualitative similarity here found he extends to all the "various types of experience." Those experiences which are "statistically common" he calls physical, while those that vary greatly or appear but rarely are for him the

psychical; and thus he constructs a "psychophysical continuum," with no break in it, connecting the most subjective with the most objective and "external" phenomena. The only difference between the so-called mental and the so-called physical is thus one of relative regularity; and dualism is therefore demolished. My exposition is, of course, too brief to be even fair, but I take it for granted that every one who hears my paper will have read Professor Hollingworth's. Without further attempt at exposition, therefore, I wish to point out an interesting fact concerning Professor Hollingworth's argument. The phenomena which he has shown to be connected by the continuum all lie within what the dualist calls the mental. Take, *e. g.*, his test case of feeling, judging, believing, and perceiving. All these are what the dualist calls mental processes. And the same thing holds of those objects or psychical contents which Professor Hollingworth has succeeded in putting into his continuum. Now plainly this is no refutation of dualism; in fact it does not even touch the question whether, besides the psychical continuum, there be a physical world, separated from the psychical by a real chasm.

I must, of course, add at once that Professor Hollingworth will insist that he has shown his continuum to be really psychophysical. His reasons for thinking that he has done so seem to be two. In the first place he confuses—or rather he purposely identifies—the objective with the physical—quite in the manner of several of the English new realists. Now it must be remembered that in the dualistic view, the "psychical" itself contains both relatively subjective and relatively objective phenomena, mental processes of various sorts belonging to the former, while perceptual images are examples of the latter. Hence to point out the fact that there is a continuum between the two is not to refute the dualist; and to connect up the psychical with the physical by the legerdemain of arbitrarily *defining* the physical as the objective is to win a purely verbal victory. And what I say here of Professor Hollingworth would apply equally well to Professor Alexander and Mr. Moore. If all you mean by the physical is the objective part of your conscious experience, then doubtless the "physical" is continuous with the rest of your conscious life. But this fact, though psychologically interesting, is quite irrelevant to the debate between monism and dualism—unless, indeed, it be taken as a surrender to Bishop Berkeley.

The other reason why Professor Hollingworth thinks he has got the physical into the same continuum with the psychical is because he insists upon being studiously unaware of the fact that his opponent has ever suggested a distinction between a thought or a perceptual, memory, or imagination image, on the one hand, and its object, on the other. One may perhaps hold that this distinction is un-

tenable, but surely one can not prove it such by failing to consider the question. You can't refute your opponent's main contention by ignoring it. In short, so far as I can see, Professor Hollingworth has proved only a psychical continuum, and the chasm between the psychical and the physical is still unbridged.

In the brief time that is left me I can do no more than *remind* you of some of the principal reasons which prevent the dualist from accepting any form of epistemological monism. And it is obvious enough that what I shall have time to say can hardly be regarded as even an exhaustive *summary* of these reasons. The first of these to which I shall call your attention is the impossibility, as the dualist views it, of regarding emotions, volitions, meanings, and even memory and imagination images, as anything else than subjective. One seeks in vain for the physical object which is numerically identical with my memory of last winter's icicles, or with Lewis Carrol's imagined Jaberwock. Nor do I see that it helps things out in the least to propose a distinction between existence and subsistence. For this distinction itself splits the world into two very separate parts; and since the new realist will hardly deny that something real happens when a subsistent object which had been merely a possible object of thought becomes an "existent" object in space and time, he will (as it seems to me) be forced to acknowledge the reality of the dualism for which the dualist is contending—the dualism, namely, between the thought or image of an object which is not in space, and a physical object actually in space. The change of terminology may have *disguised* the situation; it has not altered it.

What shall be done, moreover, with the other things named above —emotions, meanings, volitions; and what, as Professor Strong has asked, shall we say of clearness? That surely is a subjective quality of percepts. To identify emotions with physiological processes, and volitions with mathematical formulæ descriptive of movements, is a course which, indeed, is boldly taken by some pan-objectivists, but one in which I fancy not many will care to follow them.

Some of the new realists, to be sure, and notably Professor Perry, by no means go so far as to deny the subjective. Values in particular are for these thinkers admitedly subjective in nature. But while I heartily agree with Professor Perry in this position, I can not understand how he can make this view consistent with pan-objectivism. If, when values arise, something comes into existence which can not be catalogued as a physical object nor a logical concept nor as any kind of neutral entity, but only as something which is absolutely dependent on consciousness and essentially subjective, then have you not already on your hands a very real dualism?

Another difficulty which the dualist feels whenever he attempts to

identify the psychical with the physical is to be found in what seems to me the indubitable fact that the content of mind is peculiarly private. In the words of Professor James, the breaches between "thoughts belonging to different personal minds . . . are the most absolute breaches in nature. . . ."[3] Now the significance of this view is plain. All realists, whether new or old, agree that the physical world is in some sense common to all. But if it be true that the content of mind is not comon, but private and subjective, we have here evidence for dualism which it would be hard to get around. Several of the new realists have seen this danger and have consequently denied the peculiar privacy of mind. Thus Professor Perry insists that you may know the content of my mind as really as you may know the content of my purse; and that while it is true that I may conceal one of them from you, I may be equally successful in concealing the other. I have, of course, peculiarly good access to my own mind, but I may perfectly well tell you what is in my mind, or in some other way you may find it out; and when this has happened you know what is in my mind quite as well as I do.

Now all good dualists, I imagine, would be perfectly willing to admit that under certain favorable circumstances you can know what is in my mind. But frankly I fail to see the bearing of this fact upon the question of the private and subjective nature of mental content. That Professor Perry regards his argument as relevant I can explain only on the hypothesis that for the moment he has lost from sight the universally accepted distinction between the two uses of the word knowledge, namely, direct and immediate experience and what Professor James calls "knowledge about." Professor Perry has shown plainly that I can have *knowledge about* your mental content. But the realist will ask, What of it? The kind of knowledge that you can *not* have of my mind is the *immediate experience* sort. I may describe my emotion to you, just as I may show you the content of my purse, and thus you may come to have a true idea of my experience. But your idea *is* not my emotion. I can not give you my emotion as I can hand you my money. Thus in a very real sense the content of my mind *is* private and subjective, in a way the content of my purse is not. Or, to take the comparison from another point of view, the description of my emotion, which you may indeed get, *is* not the emotion, any more than a description of my money *is* the hard cash. When I describe my headache to the doctor I do not give him my headache. And I dwell upon this distinction between the two kinds of knowledge because it is only the immediate-experience sort which is relevant to the discussion between monism and dualism. The fact, therefore, that I can tell you *about* my mental content would seem to be highly irrelevant.

[3] *Psychology*, p. 153.

A closely related feature of the situation which appeals to the dualist as extremely significant is to be found in the innumerable different images which may be derived from one physical object, whether by different observers at the same time or by the same observer at different times. This is, of course, a very old and obvious objection to any kind of epistemological monism, yet I can not but feel that all the attempted answers to it have somehow missed the real point. If it be true (and surely no one will deny it) that there may be a large number of different images of the same object, it is hard to see how they can all be *identically it*. For this is plainly not a case of an identical element being found in two groups; in many cases it is easy to show that the various images constitute *different elements*. Take, for example, the images that you and I get from this sheet of paper; or the image which I get from a house when I am twenty feet from it and my image of it when at a distance of a mile. The two images differ from each other so considerably, even if we confine our attention to size alone, that it is manifestly impossible to identify them with each other. How then can we identify both with the house? Now it will not do to take refuge in the laws of perspective and identify the two images with the light waves at the two points in question. For the epistemological monist has identified my two images with the *house*. And if the house is to be identified with all the influences and relations that stream out from it, we shall have exploded our house and strewn it to the extremes of the material universe; and we shall also have exploded our theory of so-called "direct perception."

The difficulty just discussed is closely allied to the question raised by the physical and physiological facts of perception. If it be true, as both the new realism and the old maintain, that there are independent objects in the real space with qualities of their own, and if it be true, as physiological psychology teaches, that our percepts of these objects are mediated first by a series of physical processes in the space between the objects and our organisms, and secondly, by a series of physiological processes within our organisms, it is extremely difficult to see how the perceptual fact at the end of the series can *be* the physical object in external space which started the process going.

The well-known difficulty in regard to time is a corollary of this physiological question. The physical and physiological processes involved in perception require time. Hence an appreciable amount of time must pass between the motion which I perceive and the rise of my perception. During that interval the action which I witness has been completed and the object which performed the action may have ceased to exist. How then can the past and possibly non-existent event be numerically identified with my present perception of it?

How can the object which no longer exists *be* my undeniably present and actual perception? I can understand (thanks to the reiterations of my new realist friends) how a given object A can be in two groups. I can not as yet comprehend how an existent object can be numerically identical with one that no longer exists.

This last sentence expresses the essence of the argument which the dualist finds in the facts of error and illusion. And he is therefore astonished when he meets with attempts on the part of pan-objectivists to fit these recalcitrant facts into their system by means of long and elaborate explanations of the physical and physiological *causes* of these errors. Doubtless the double image which one gets by pressing one eye-ball is to be accounted for on strictly physical lines; yet that does not make it the less true that there is admittedly but one object and that there are demonstrably two images, and that the two images can not *be* identically the one object. One may, of course, take refuge in the assertion that the two images are to be identified with the light waves *from* the object or with the resulting brain processes; but quite aside from the very dubious nature of such an identification—an identification which in the end will prove to be utterly meaningless—it is plain that to have recourse to this position is to abandon the central thesis of the new realism, namely, the identification of the common object in the common space with the individual's percept of it.

Be it noted now, in conclusion, how all these difficulties, as yet certainly quite unsurmounted by pan-objectivism, vanish at once if we take the simple and natural position of dualism. To insist that dualism can not be accepted because inferential knowledge and transcendence seem a bit hard to understand, and then to adopt in its place a theory so bristling with irreconcilable characteristics as I think I have shown pan-objectivism to be, would suggest forcibly the interesting performance of straining at the gnat and swallowing the camel. To me, at least, this newer view which I have been criticizing seems quite as uncalled for and gratuitous as it is unquestionably ingenious and original.

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THE DISTINCTION BETWEEN THE MENTAL AND THE PHYSICAL[1]

THE following considerations can make no claim as a contribution to a baffling subject. My philosophic studies have been somewhat restricted to the logic of mathematical physics and applied ethics, and on epistemologic problems I can speak only with an inno-

[1] Read before the American Philosophical Association, December 27, 1916.

cence which I trust may not be regarded as too childish. But being drafted into this discussion, I prefer to be guided by my loyalty to this association rather than by any confidence that what I have to say will be of great service to my more mature colleagues.

In answer to the question put to us, "Is the division of entities present or involved in experience into the two reciprocally exclusive classes of the mental and physical to be retained?" I wish to maintain that while we must, by all means, keep the distinction between the mental and the physical, we must reject the view that they are mutually or reciprocally exclusive.

Two substances or classes, *A* and *B*, which are distinct, may bear to each other any one of four relations. First, *A* may be part of *B;* second, *B* may be part of *A;* third, *A* and *B* may be mutually exclusive; and fourth, *A* and *B* may be overlapping or intersecting. If *A* denotes the physical and *B* the mental realm, the first three views may be called, respectively, mentalism (subjective idealism), materialism, and dualism. For reasons which will be clearer later on, the fourth view may be called neutral monism.

1. Idealism (Mentalism)

The thesis that all is mental, and that what we call physical is only a certain selected portion thereof, is a doctrine that few nowadays clearly and expressly maintain. But philosophies which explain everything as made up of a stuff called experience, and conceive experience as psychological or mental, lead to the same result. At any rate, this type of idealism is expressly found in systems as diverse as those of Fichte and Schopenhauer, and is indubitably implied by the language of Locke, Berkeley, and Hume. The great historic argument for it is Locke's assertion that "the mind hath no other immediate object but its own ideas." The metaphysical doctrine, then, that everything exists in the mind, finds support in the epistemologic doctrine that the mind can know only its own modifications. The latter doctrine, like most others which have been widely assumed as self-evident, has received astonishingly little evidence or proof in its favor. It has a certain verbal cogency so long as we do not distinguish between sensation or ideas as processes and as objects sensed or thought of. Since that distinction has been insisted upon by Mr. G. E. Moore, in his epoch-making paper on the "Refutation of Idealism," few have come out openly in defense of the proposition that the *esse* of things is their *percipi*.[2] Even writers who call themselves idealists, like A. E. Taylor, have pointed out that the doctrine that nothing can be known except by an idea of it involves a vicious infinite regress. If, on the other hand, ideas can be known

[2] *Mind*, Vol. 28, 1903.

directly, why can not things also be known directly? It is not, however, necessary to argue this doctrine. It is sufficient to point out that the proposition that all is mental, like other assertions about *all things* is futile. If everything is mental, no specific differentia are left for that which we ordinarily call our inner or mental life, our hopes, emotions, *etc.* By resolving physical objects into ideas, we are still left with a difference between ideas like spoons with which we eat, and ideas in our mind only.

In thus pointing out the scientific futility of monistic subjective idealism, I do not mean to deny its tremendous social and religious significance in the history of civilization. It offered a powerful support for the revolutionary individualism which broke the bonds of external authority in political and religious life. It destroyed the belief in the divine power of kings and priests. Above all, it offered a vital compensation to the emotional depression of the Copernican discovery that man's abode is not the center of the universe. "Your body," idealism said, "may be located on a tiny speck of dust, but the whole stellar system, after all, exists only in your mind." That doctrine, however, had no effect on the study of astronomy or on any other physical science. Indeed, in its phenomenalistic or sensational form, as represented by Mach, Ostwald, and Pearson, this monistic idealism would have proved a positive hindrance to progress in physics if it were not for the fortunate fact that it has had no influence on those engaged in physical research. For by insisting that physical objects are constituted by sensational elements only, these thinkers would expressly rule out such hypotheses as those relating to atoms, electrons, *etc.*, which have in recent years transformed physical science. It is true that there are serious dangers in multiplying hypothetical entities, which led the greatest of all physicists to say "hypotheses *non fingo.*" Nevertheless, the fact remains that the hypothetical method as embodied in works of men like Farady, Kelvin, Boltzman, Maxwell, and J. J. Thompson has been an integral part of the life of physical science.

2. Materialism

A similar logical or scientific futility attaches to materialism. It is not necessary to refute the resolution to call everything matter or body. We need only point out that the science of physics treats only of definite kinds of bodies, gases, solids, *etc.*, and excludes from these such entities as wishes, imaginings, beliefs, *etc.* If entities of the latter kind could enter the physical causal series, modern science would be impossible. It would be indistinguishable from witchcraft and magic.

3. Exclusive Dualism

In our ordinary daily experience, the handling of spatial things is of such preponderant importance that there naturally arises a tendency to reification, to regard all objects of consideration as if they were mutually exclusive *things*. This tendency is reinforced by the philosopher's love of simplicity, since the relation of mutual exclusion is the simplest relation between two different classes. This is embodied in the ordinary phraseology in which the problem is stated, for example, "the external world," "the contents of the mind," and the use of the dangerous little word *in*. Now, it seems obvious that externality is a relation which we apply only to physical objects. One physical thing is external to another physical thing when they occupy different portions of space. In what sense, then, can the whole physical world be external to a mind which is by hypothesis not physical at all? It is not too much to assert that the whole modern epistemologic problem arises from the fact that, having conceived the mental and the physical as two mutually exclusive substances, it becomes difficult to express the simple fact that physical objects are knowable and that knowledge is an act of the mind. The epistemologic doctrine, according to which we know, not objects directly, but only copies of them in the mind, is but a device whereby the hard and fast Cartesian dualism may be maintained, by preventing the physical world itself from entering into the mind. All our modern classical doctrines of sensations, images, *etc.*, are but steps in this construction. I am not competent to pass any judgment on the recent psychological controversy as to whether we do or do not have sensations or images. But even if we do have sensations that are not simply qualities of physical objects, and even if we never think without having images, it still seems to me demonstrably certain that we do know objects other than these sensations and images. When I know the binomial theorem, Occam's razor, the periodic law, the history of the Chinese political system, the fact that Poland is starving, or the supposed truth that nothing can be known except by experience, I may or may not have images of various kinds before the mind. But the objects known are not the images present, but things not sensibly present at all. Indeed, does not the dogma that nothing can be known except by an idea, sensation, or image of it, *presuppose* that we do know things of which there are sensations, images, or copies? Let us examine carefully the usual arguments for the dualistic position.

1. Ever since Hobbes, the existence of sense organs has been used as an argument that we perceive not the objects, but their phantasms, matter assumes that objects can be known as existing at a time differin time and space from the objects known. This account of the matter assumes that objects can be known as existing at a time differ-

ent from the time of perception; but if this is admitted, the argument for the existence of images, ideas, or perceptual doubles of *all* things known is not at all necessary. We need only admit that we may make a false judgment as to the time position of certain objects, and that further knowledge may lead us to correct that judgment. This would mean that there is no ultimate dualism between objects known and objects perceived, but that in actual concrete perception there is a judgment element which may or may not be compatible with other judgments.

2. The view that erroneous physical objects have their seat in the mind only, seems to me to have been made the object of unanswerable objections by writers as different as Professors Sheldon and Holt. Briefly, the point is that what makes us judge an object or quality erroneous is incompatibility with other objects or qualities regarded as veridical. But such incompatibility exists only between objects in the same known universe. Forms such as round and square are incompatible, but not round and heavy. If veridical objects existed in the physical realm and erroneous objects in the mental realm, and the two realms were exclusive, there could be no explanation of error.

3. Another mode in which the world is cut into a physical and a mental half is by assigning primary qualities to the former and secondary qualities to the latter. But the arguments by which this division has been supported since the days of Locke and Berkeley seem to me all indefensible. The argument is that since the same object appears hot to one hand and cold to another, the heat and cold can not be qualities of the object, but must reside only in the mind. This is a *non sequitur*. *Prima facie,* it could prove only that the heat of the object depends on the hand or physical sense-organ, and not on the mind. In point of fact, physics explains the variations of secondary qualities not by reference to mind, but by taking into account the physical structure of the medium and sense-organ. Such variations are duplicated in physical instruments such as thermometers, cameras, *etc.* Nor is it true that this relativity is characteristic only of secondary qualities. It is also true of primary qualities such as the weight of the body, its velocity, and even some of its geometric properties, such as its projections, *etc.* Indeed, there are few things on which physics is so certain as that the properties of physical objects depend on the system of objects in which they are placed. What qualities are to be regarded as primary is simply a problem of logical economy, as to what is the smallest number that must be assumed such that all other properties can be derived from them.

In general, if we remember that physical objects are knowable and that mental events take place under determinate physical condi-

tions, it is difficult to see how one can maintain that "the antithesis between the mental and the physical is the most absolute antithesis within the realm of being."[3] Again, if we maintain that things are not the direct objects of knowledge, and that what we know directly are percepts, images, and copies of things, then we have the hitherto unanswered question, what evidence do we have that these images, *etc., are* perfect copies? Direct comparison between things and our images would seem to be out of the question. It seems also that physical things have a more continuous existence than our intermittent ideas of them. Moreover, if we hold with Professor Pratt that spatial characteristics are in the mind, does it not follow that space itself must be in the mind, and if so, what becomes of our rigid dualism? There seems to me no escape from the logical fact that if we divide the total universe into two mutually exclusive classes or substances, one of these will have to be defined in purely negative terms; and all negative classes are essentially indefinite.

4. Neutral Monism[4]

This view is not so much a solution to the problem how the mental and the physical are to be distinguished, as a doctrine how the question must be put, in order to make the answer significant. It insists that every system, physical or mental, is but a class or selection of neutral entities, and therefore can be defined only by the character of the fundamental principles or postulates of the system. The physical system is thus simply the class of entities to which our fundamental physical laws are applicable, and the psychological or mental system is the class of entities that meet certain other requirements, such as the capacity for specific response or what not. Such classes need not be mutually exclusive, and their precise interrelation must be the object of specific detailed study. Thus the whole physical system as an object known may be a single term in a mental series, while the mental series itself may be attributed to a particular physical organism in time and space.

The question, how can the same entity be both in space and in consciousness, can be readily answered if we remember that the same thing can be in a number of different classes which are not mutually exclusive. A man may be in this room, in our association, and in a state of weariness, just as a man may be both a bankrupt and the author of a number of books on how to succed in life.

The assertion that the mental and the physical are complexes of neutral entities may suggest the question, where and when do these neutral entities exist, if not in the mind or in physical space? The

[3] Professor Pratt, this Journal, Vol. XIII., p. 687.

[4] This point of view may as well be called pluralism.

answer is that anything may be said to exist in a given universe of discourse if it can be shown that it occupies a position therein. Thus Hamlet's melancholy and reflective character exists in Shakespeare's play, and the roots of equations exist in the number system. For in each case the particular entity can be shown to be demanded by the character of the system and of the other entities in it. So far as logic is applicable to both physics and psychology, neutral logical entities may be said to be parts both of the mental and of the physical series. But in so far as logic is distinguished from physics and psychology, the system of logical entities exists just as truly as the mental or physical systems exist. In our daily routine problems as to existence in the physical system are of tremendous concern, but there is no evidence for the view that existence in the physical or mental system is in any way logically superior to that in the purely logical or other system. This may seem to degrade the term existence, and perhaps it does. But I believe that few habits would be more useful to philosophy than the habit of refusing to discuss whether certain entities exist, unless we ask exist how? or in what kind of a system?

As one looks over the recent literature of the mind-body controversy one can not escape the feeling of the fruitlessness of it all. No important issues seem to grow out of or to depend on the different answers given to these problems. Hence there are to-day a growing number of thinkers who feel that the wisest course is to turn one's back on the whole business and face instead some of the more fruitful problems of philosophy which have been neglected for the sake of the epistemologic adventure. But if such turning one's back on that which our fellow-workers regard as so important is not to be a mere manifestation of the wisdom of the ostrich, we must make certain that we have really eliminated the epistemologic difficulty *as an initial problem.* For woe be unto us if its protean ghost continues to haunt us! A sound epistemology can, therefore, certainly be useful in saving us a lot of wasted effort and freeing our energies for genuinely fruitful problems.

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DR. WATSON AND THE CONCEPT OF MENTAL DISEASE

DR. WATSON'S contribution to the discussion of *Behavior and the Concept of Mental Disease*[1] is of such paramount importance and touches upon so many points of mutual interest for the psychologist and psychiatrist that I am tempted to ask for some

[1] This JOURNAL, Vol. XIII., p. 589.

space in your valued JOURNAL to comment upon the article in question.

While with many another student of diseases of the nervous system I hold it somewhat regrettable that Dr. Watson should have had the particular straw-man construction cited, through which he sought to obtain the physician's concept of mental disease, yet his handling of certain limited aspects of the problems are so practical that it becomes evident he utilizes a larger concept than the one-sided pattern afforded him through this particular instance. In justice to modern psychiatry it must be said that the paper in question was an extremely naïve and simplistic presentation of the problem of mental disease.

Dr. Watson seems to show a not unusual resistance to certain terminological usages. We sympathize with him, and in historical retrospect are reminded of Galen's interesting comment on the hysteria problem, now as actively discussed as it apparently was then. Galen reminded his readers that the discussion of the terms to be used seemed to constitute the entire activity of the physicians of his day, and he reminded them that it was more important to understand what no doubt Dr. Watson really is most insistent upon, namely, "the behavior of the thing."

The attitude of the behaviorist has century-old warrant and it is a source of much satisfaction that the terminology of the different disciplines of psychology and psychiatry are getting sufficiently mutually interpretable so that the actual conduct of the patient may be described interchangeably in one set of terms or another, and that both shall further our understanding of the "behavior of the thing"; *i. e.*, the sick individual.

If it has seemed to the actual worker with disordered mechanisms that the psychology of the laboratory has been too radically divorced from actual contact with human life and its very practical problems of adjustment and non-adjustment, then this urge to step out into the realm of actual affairs, whose understanding and ultimate control must be grounded in the most profound principles of biology and psychology, marks progress toward a renovation and vitalizing of such a purely theoretical psychology.

For some reason, however, it seems to be balked by a misunderstanding of the function of terminology and the place this occupies in the practical psychology of the Freudian school. The reason seems to lie in the form of explanation of human problems, success or failure in adaptability, which can as yet reach no further than a behavioristic conception of these phenomena. The attitude of approach to the difference between this form of explanation and that which makes what seems to Dr. Watson an unjustifiable and mystical

use of certain terms is nevertheless one which would understand and find the actual working basis which psychology will be constrained to adopt.

The psychopathologist, contrary to Dr. Watson's expressed conviction, is not condemning himself to the use of effete terms of psychology. He has instead taken many of those which had grown meaningless and sterile in the service of a psychology lacking vital application, and appropriated them to the service of concepts which furnished the fuel for rekindling. The new life, however, with which he has informed them confuses, at first, and apparently overwhelms the psychologist and the philosopher whose terms have been snatched away. It leaves them with an empty formalism or at best a behaviorism whose conception of vital human functioning is suggestive of nothing so much as of a fire crackling through a carpet of dry leaves. It reaches to no depths, it involves no profound smoldering sources of conflagration, it leaves no real scars beneath the surface. It merely pursues its way in an increasingly complicated maze of spontaneous action, but all superficial and after all easily traceable. So, it seems, is the purely automatic and reflex conception of life as an explanation of successful adjustments and pitiable maladjustments.

It seems impossible to explain and interpret adaptability and non-adaptability without a third dimension of depth in the life of conduct and behavior. At least this is true if this is to be done constructively, and, of course, no other than a constructive attitude and method can be of any value in psychopathology.

Dr. Watson's behaviorism constitutes a marked advance upon the older mechanistic and facultative psychologies. It maps out to a certain extent the effects of the forces in a way impossible to them and provides an elastic, schematic explanation of these phenomena through the unlimited complexity of automatic and reflex activities. But it is confined to a mechanism and to a materialism conceived in its own way. Therefore its exponent comes away puzzled from the assembly of physicians who accept with satisfaction the concept "mental" in their comprehension and treatment of functional disturbance in adjustment and adaptation. He regrets that they have fallen victims, slaves, to a terminology fast being outgrown. Perhaps these particular ones had, but, as has already been expressed, psychopathology does not look for light in this direction.

Behaviorism scanning but one plane must necessarily be blind to the necessity and utility of such a concept which reaches profoundly into certain very real factors, which seem to extend beyond the purely mechanistic automatic and reflex means of response. It can not conceive just wherein lies the apparent complaisance of the physicians in the acceptance of this concept to which the urgency of human actual-

ities compels them. They find in referring the pathological phenomena under consideration to the "purely mental" that they are provided with a concept of dynamic power, a workable tool which penetrates causes and beginnings and provides a means of reeducation and redistribution of effect involving adequate discharge, before which the colorlessness and ineffectualness of an ideal behavioristic reeducation plainly reveal themselves. It scarcely needed the hypothetical case of the canine "neurasthenic" and "compulsive neurotic" to point the contrast between a purely reflex conception of retraining and the background of complicating and determining factors comprised in the concept "mental."

Are we to consider the human response mechanism, and that of the dog as well, as a perfected machine capable of smooth running like the motor car on the street, to be sure as infinitely more complex and varied as the nervous mechanism possesses the ability for developing the complexity of association and multiplied response? Or are there some further dynamic forces which have in the beginning initiated and then developed this delicate and illimitable mechanism for their own service, and utilized it in ability to meet and mold reality or failed in confusion and inability before the exigencies of existence?

Freudians would meet Professor Watson just so far, that they, too, realize the inadequacy of terminology, but then at once they advance to a further position. The partial functional capacity of terms which makes them only symbols of that which can not be crowded into mere words, denies to language merely a place in the system of motor habits. Its importance in this system is a point well emphasized. Yet speech is no more capable than any other motor mechanism of taking the place of affective functioning, but is one of the vehicles through which this is given discharge, an implement which the same affective impulses first formed and are still perfecting for their use.

Neither is it enough to attempt to locate a something "corresponding in part at least to the *affective values* of the psychologists and pathologists," something with which the author supplements the *motor habits* which have so far occupied his discussion in the response of the glandular system. The effect of emotion there is plain to be seen and growing more definite to the understanding with the aid of experimental physiology, but to confine effect there is another matter altogether.

There can be no doubt that psychoneuroses have brought about "habit twists" which have become a faulty equipment in the patient's reactions to life. To acknowledge this is by no means to lose sight of the relation of these habit twists as only forms of expression of a self that is more than a complex and coordinated system of language

habits and bodily habits. It is difficult at a stage of development where language is the chief means for such expression, and so interwoven with every other mode of expression and supplementary to it, to separate it from self-consciousness for purposes of evaluation. But there was something to be expressed before language was formed for this service. Even if it is admitted that such expression merely found other motor channels before these specialized reactions were laid down, what in turn conditioned them and demanded the variety which increases with increasing expansion in that capacity behind the mechanical nervous system? The very fact that the patient can not phrase in terms of words the habit twists which have become a part of his biological equipment would imply that there was something more than merely bodily habit twist. There is something other than a set to the higher nervous centers which compels them to follow a distressing and irresistible mode of futile thought and action, an obsession or a compulsion, something more in the autonomic and sympathetic centers which develop bodily habit disturbances, paralyses, motor tics, derangements of circulation, respiration, nutrition, all of the compensatory or defense reactions, motor and sensory, somatic and psychogenic.

Whence arose the force of the "primary stimulus," such as sex trauma, exposure, masturbation, etc., in childhood to produce such a train of effects in the behavior system? If conscious means only the ability to put into terms of words any and all of one's schemes of reactions, whether of the twisted sort or smoothly concurring motor reflexes, then there is no room for a dynamic self who has both inherited and deposited an historical past, which is now peculiarly his own and which he concentrates into the converging point of a consciousness which deliberately carves into the future. To postulate a being with a biological inheritance which lies only in "conditioned reflexes" does not constitute a sufficient workable explanation for the overwhelming factors of disturbance which act upon such a being. Even the author's "conditioned" implies this further vitalized background.

The physician, then, who is a psychopathologist, and by that the author could not have been in the broader sense "the only psychologist present" at the medical meeting cited, has a dynamic concept full of potentiality for interpretation of phenomena which have been so successfully concealed by the empty terminology of a helpless psychology that the obstructive and destructive nature and extent of their activity have gone,—deplored, but not arrested. A way of understanding and even of discovery of an unsuspected ramification and complexity of such action has been opened through this concept, the pragmatic truth of which, at least, is attested by an effective therapy which is proving itself lasting in result. It has proved

necessary to employ that highly serviceable and convenient tool, language, in order to utilize certain symbols of terminology which should keep clearly before workers in this very practical sphere this *mental* psychogenic concept in its essential dynamic significance and provide for the extension under it of various hypotheses which share its nature and are simply forms of its application.

Freudians are frequently at least tacitly accused of a word fetichism. Here the accusation takes the form of regret that the psychopathologist has fallen under the spell of terminology, and that one to be considered identical with barren psychological concepts. The spirit of life that is blowing over the valley of dry bones is, however, just what the critic fails to appreciate. Transference from the outgrown terminology and concepts alike to behavioristic concepts, a biology on one plane alone, could bring no such revival into a moribund psychology.

The psychologist who sees his terms withdrawn from him into a new sphere, terms in which he himself saw the emptiness and ineffectuality in the vital affairs of men, need not, however, be seized with alarm for the fate of a "useful and fascinating" new growth in the psychopathological world, which is taking to itself such a terminology. He may come away puzzled at the satisfaction of the adherents of the new method because they can shove their problems under the much-abused and well-worn "mental" terminology. This psychologist has made a certain advance through the behavioristic scheme, but this, as we have seen, affords no depth of perspective, no glimpse into the rich background of ultimate cause and conditioning. He misses that revivifying quality which preeminently distinguishes Freud's thought and which his followers have caught and conceived as the essential element of all their work.

It is simply expressed in this often repeated thought that language, terminology, is only a vehicle of expression for that which its symbolism connotes rather than that which it actually denotes, and likewise a tool for again entering into facts and thus controlling them and in turn enlarging the original pragmatic concepts. When Freud and other psychopathologists who accepted this comprehensive outlook began to discover the boundless realities that had lain hidden or were manifested only in inexplicable, but disturbing manner, it was found necessary to comprise these facts as far as possible under some manageable terms and to retain also a comprehensive nomenclature for an individual entity to which these phenomena belonged and from which they arose as manifestations. Mental and psychical both stood ready for such service. Both had been variously employed, both rankly abused in the legitimate, but too often misguided, effort to account for and classify the phenomena which had to a greater or

less extent overwhelmed each thinking individual. Both had come to carry certain concepts which gave no explanation and only served to rationalize or deny or otherwise obscure unwelcome and terrifying facts.

Clear as is this distinctive valuation of terminology, as in itself merely the means and implement, yet equally clear in Freudian thought and practise is its plasticity and adaptability to such use and the close connection that at once is formed with its underlying material. The origin of language and its growth, step by step with human thought and expansion of instinctive life into widening and evolving fields, have left their impress upon the vehicle itself. We can not, therefore, separate even our most exhausted terms from a certain richness, a richness which has become theirs and which revives when they lend themselves once more as here to the service of such vitalizing concepts. They attain a new acquisition of wealth and adapt themselves to further conceptual expansion, if they are kept in contact with actuality in its depth as in extent, with a mental content as with the more exactly appreciable physical phenomena.

Terminology, therefore, conceived thus is no more and no less than that for which it stands. Lifted out of an unproductive psychology and philosophy, which had left it barren and meaningless, into the service of a new and profound method of human understanding and a practical psychotherapy to which such an understanding is bound, it is no wonder the terms seem now a misfit to those who have held the limited concepts which they once denoted or even to those who find a remedy in the limitations of behavioristic attitude.

Such an understanding of the use and value of terminology makes it impossible to accept Jung's "libido" as an *equivalent* of Driesch's "entelechy." What has the latter accomplished, united with its concept, in revolutionizing psychopathology and actually reawakening the patient borne down and cut off from the world of real events and achievement by an incomprehensible load? Has it explained injurious factors, brought them under control, and guided to readjustment and development of capabilities hitherto unrecognized or deemed impossible? This has been the service of the libido concept directed under its expanded terminology toward human lives, as every psychoanalyst could testify. There is all the difference between a concept built upon an abundance of facts accessible in turn to further exploration and discovery of the very facts out of which it originally arose, and a philosophically defined speculation of[2] "an agent . . . that acts 'into' space . . . that belongs to nature in the purely logical sense in which we use the word," but that does not come into actual pragmatic contact with facts to evaluate and readjust them.

[2] Driesch, *The History and Theory of Vitalism*, London, 1914.

The limitation of the behavioristic psychology, if a behaviorist would admit, as Professor Watson seems indeed to do, the application of the term psychology to his system, implying as it does a psychical reality, a "mental," reveals itself in the author's acknowledged method of teaching the Freudian movement. So little must be left when he has stricken out the "crude vitalistic and psychological terminology" that the wide mantle of Freudian conceptualism must indeed seem to cling with keenly felt inappropriateness about the shrunken body of the narrowed "psychology" of so-called biological factors limited to one sphere. The really vitalistic factors of humanity are for some reason excluded. Interest seems, strangely, not to lie with them, or are they perhaps too "crude" to be acceptable even to this "for some years . . . earnest student of Freud"?

The introduction of this word "crude" affords striking contrast between the psychoanalysis of Freud and other physicians who are pragmatically exponents of the mental and the psychologist of the other limited method. It doubtless also gives a clue to the fundamental reason for accepting a limited mechanistic explanation for richer phenomena. Opponents of Freudianism are becoming more and more prepared for this interpretation of their differences and antagonisms as resistance measures, but since Freud's concepts have their origin in experience and are working with facts this explanation is unavoidable, for human realities are the same whether we are adherents or opponents or subjects of the method which is seeking to get at the truth. In this case the author's use of the word betrays itself.

A greater point of interest, however, lies in a consideration of the word itself which manifests the difference in the two attitudes. At what point may we drop out the "crude vitalistic" terminology? At what stage in human psychic development is a factor distinguished as crude and when does it cease to appear as such? Is not the crude just as much a part of human experience and evolution as something to which we might give another name? Is the value of the crude less than that of the refined, or whatever we should call it, in the contemplation of the whole of human existence, its manifold features and the exigencies of its development? When do standards of value and judgment become fixed in the dynamic onrush of psychic life, the effort of the libido—for these terms may now be used—toward expression and creation, that we may cast aside certain portions as crude and no longer worthy of taking into account?

To be sure the retention of the crude—to admit a comparison with progressive standards—and its enrollment among the factors of mental life entitled to serious consideration presupposes the acceptance of the concept of the unconscious and the survival of a psychic

life which, too, has its biological history and in which there is a conservation of memory images with accompanying emotion or affect. This hypothesis of a profounder reality was also called into being by discovered facts. Biological conservation in the behavioristic sense neither accounts for these facts nor could it deal with them in a complete constructive therapeutic or a comprehensive understanding of human problems and possibilities. It alone can not arrive at the more complete results dependent upon a larger conception, yet it affords a practically illuminating description of the manner in which the psychical factors work. It is much to have realized the emptiness of the old terminology as it was employed. A further step will be to enter into the fuller conception which has revitalized these terms.

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REVIEWS AND ABSTRACTS OF LITERATURE

India and Its Faiths. JAMES BISSETT PRATT. Houghton Mifflin Company, 1915.

When the reviewer first saw Professor Pratt's book advertised, he decided not to purchase it, on the ground that a visitor of a single winter season in India, admittedly not a specialist in Indian religions, could hardly be expected to contribute anything of special value to a subject of such great complexity and difficulty. The average book written under such circumstances is apt to be a disappointment. But this book is distinctly better than the average of its kind. The author remarks in the preface that he is neither a Sanskritist, a missionary, nor a convert to some Oriental cult, and that this perhaps constitutes his chief qualification for writing on India, in that he has no ax to grind and has centered on present-day issues. This has certainly preserved him from the mass of citations from ancient texts that makes Hopkins's *Religions of India* rather hard reading for the layman, from the frequent comparisons with Christianity that render so much missionary literature distasteful to the agnostic scholar, and from the extravagances that make Oriental devotees absurd to all but themselves. On the positive side, Professor Pratt is evidently a keen observer, who has made excellent use of his opportunities for observation and personal interviews, and who indicates a very fair acquaintance with the general literature in English on the subject. The fact that so much that he saw and heard was fresh to him gives a charm of enthusiasm to his narrative, while the character of the individuals whom he interviewed renders their statements of interest to the student as well as to the novice.

The first chapters of the book are taken up with readable and sympathetic sketches of Hinduism, both its theology and cultus, combining first-hand information with material gained from reading. Several chapters then cover the offshoots of Hinduism, old and recent. The discussion of Jainism is especially full. Islam, Parsiism, and Buddhism follow, the last being illustrated from the Buddhism both of Burma and of Ceylon.

Professor Pratt states in his closing chapters that he considers Christianity superior to any of the religions of India, but not every one might infer this from his previous discussion. His attitude towards Indian religious phenomena is throughout sympathetic, and even where he points out undeniable weaknesses he is usually willing to admit extenuating circumstances and to quote abuses of a similar nature in certain types of Christianity. One can not but feel that if some of the phenomena in question had been encountered within the boundaries of Christendom they would have received much less charitable treatment, but the author's desire to be appreciative does not prevent him from some very outspoken condemnation. In particular, we imagine that few theosophists will derive any comfort from his sketch of Mrs. Besant.

Information from missionary sources seems usually to be received with suspicion, but in summing up the work of Christian missions in India, Professor Pratt again shows himself sympathetic, and declares it both possible and desirable to bring Christianity to India, provided scholastic philosophy be left behind. He finds, in conclusion, a great charm in the simplicity and quietness of Indian life, in its exaltation of spiritual over material things, and wishes that in this respect the West might learn from the East.

The book is one of the best of its kind that we have seen, and furnishes an excellent introduction to the study of Indian religions. Farquhar's *Crown of Hinduism* and *Modern Religious Movements in India* will be found useful supplements.

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Morphology and Anthropology. Volume I. W. L. H. Duckworth. Cambridge: University Press. Pp. xvi + 304.

Dr. Duckworth's *Morphology and Anthropology,* first published in 1904, at once took its place as the standard English treatise on somatology, or physical anthropology. "Section A" of the work, dealing with the comparative anatomy and morphology of the mammalia, now appears as the first volume of a second edition. The section has been expanded from 154 to 298 pages, and the number of illustrations, from 121 to 208. Most of the latter are based on the author's sketches and are very clearly reproduced.

An introductory chapter furnishes a useful account of the rise and progress of physical anthropology. The science may be said to date from 1699, when a Cambridge scholar, Edward Tyson, published his *Orang-Outang, sive Homo Sylvestris.* This was the first attempt to describe the anatomy of an anthropoid ape. In the eighteenth century Linnæus in his *Systema Naturæ* went back to Aristotle in definitely assigning man to a place among other animals, and the great Blumenbach classified the chief varieties of man and investigated comparative human craniology. In the nineteenth century came the brilliant work of Broca, Virchow, Metchnikoff, and others, who made full use of evolutionary concepts and established physical anthropology on a solid foundation.

The present volume is described as a "handbook for students," mainly those who combine the study of physical anthropology with human anatomy. It presumes, therefore, some familiarity with anatomical terms. Although the text is very condensed, the statements made receive constant elucidation from the excellent illustrations. Any one looking for a general account of the mammalia and for a special description of the primates (anatomy, crania, and dentition) will turn at once to Dr. Duckworth's manual.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. October, 1916. *Measurement of Attention in the Field of Cutaneous Sensation* (pp. 443–460): K. M. DELLENBACH. – The results of a former experiment (reported in a former number) with auditory stimulations are confirmed by experiments in intensity and extensity of cutaneous stimulation. *Visual Imagery and Attention: An Analytical Study* (pp. 461–492): HELEN CLARK. – Pure types of images are comparatively rare. Ocular movements indicate in general secondary attention and changes in clearness. *Reconstructive Recall* (pp. 493–506): GARRY C. MYERS and CAROLINE E. MYERS. – Doubtful recalls usually are wrong, while bits of memory that seem right usually prove so. Remnants of remembered selections can often be pierced into accurate memories even though at first apparently forgotten. *An Experimental Study of Economical Learning* (pp. 506–529): H. E. CONRAD and G. F. ARPS. – In arithmetical computations a group of students taught to think in terms of results only surpassed those with the same drill in the usual way. Economical methods should be used early to avoid interference effects. *New*

Laboratory Equipment (pp. 530–549): CHRISTIAN A. RUCKMICH.–Descriptions of the following apparatus are given: Tuning-fork of variable intensity, automatic tuning-fork hammers, adjustable wire forks, blind-spot apparatus, disc cutter, variable color mixer, apparatus for paired exposures, tambour, piston recorder, adjustable standard and 25 wall charts. *Notes on Practise Improvement, and the Curve of Work* (pp. 550–565): E. L. THORNDIKE.–Results are given on the learning curve in clerical work, relation between initial ability and improvement, the effect of a day of study and a night of rest, and the effect of rest on achievement and improvement. *Minor Studies from the Psychological Laboratory at Cornell University. On Cutaneous After Images* (pp. 566–569): F. L. DIMMICK.–After-sensation was always found. *On Perceptive Forms Below the Level of the Two-Point Limen* (pp. 569–571): E. DELASKI.–Subliminal separations are discriminable probably through a qualitative judgment. *Is Introspection Individual or Social, Within or Without?* (pp. 572–573): W. D. WALLIS.–The outside world is a part of the introspective individual as well as his being a part of it. *Book Review* (pp. 574–577): Pierre Janet, *Digest of "Alcoholism and Mental Depression":* FREDERICK M. SMITH. *Book Notes. Index.*

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NOTES AND NEWS

AT a meeting of the New York Psychiatrical Society, on December 6, 1916, a committee was appointed to inquire into the activities of psychologists and more particularly of those who have termed themselves "clinical psychologists" in relation to the diagnosis and treatment of abnormal mental conditions. This committee desires to make the following report.

We have been greatly impressed by the earnestness and success with which psychologists are endeavoring to make their science serv-

iceable in dealing with the practical affairs of every-day life. We wish to record our belief in the wide usefulness of the application of psychological knowledge and of the findings of certain psychological tests in such fields as the modification of educational methods with reference to individual differences, the vocational problems presented in various special industrial operations, the development of scientific methods in advertising, salesmanship, and other means of business appeal and in the investigation of such special problems as the relation of environmental factors to the quality and quantity of the output of the individual. We feel that the results to be attained in these fields fully justify the belief that the widening of the scope and application of psychological knowledge will make psychology one of the most useful of the social sciences instead of a narrow field for study and research with but little actual contact with the practical problem of life.

We have observed with much distrust, however, the growing tendency of some psychologists, most often, unfortunately, those with the least amount of scientific training, to deal with the problem of diagnosis, treatment, social management, and institutional disposal of persons suffering from abnormal mental conditions. We recognize the great value of mental tests in determining many questions which arise in dealing with such patients, but we have observed that most of such work which is being done by psychologists and particularly by persons whose training in psychology is confined entirely to learning how to apply a few sets of these tests, is carried on in schools, courts, correctional institutions and so-called "psychological clinics," quite independently of medically trained workers who are competent to deal with questions involving the whole mental and physical life of the individual.

We believe that the scientific value of work done under such conditions is much less than when carried on in close cooperation with that of physicians, and that serious disadvantages to patients suffering from mental disorders and to the community are likely to result and, in many instances which have come to our attention, have resulted. This is true especially when the mental condition of the patients examined involves questions of diagnosis, loss of liberty, or educational issues more serious than redistribution of pupils or rearrangement of courses of study. In spite of these facts two states have enacted laws permitting judges to commit mentally defective persons to institutions upon the so-called expert testimony of "clinical psychologists" regarding the abnormal mental conditions from which the patients are alleged to suffer. We believe that the examination upon which a sick person is involuntarily committed to permanent institutional custody is one of the most serious responsibilities

assumed by physicians and that in no cases whatever should it be entrusted to persons without training enabling them to take into consideration all the medical factors involved. The same is true of mental examinations of juvenile delinquents and criminals whose whole careers depend, in many cases, upon the determination of their mental condition.

We desire to make the following specific recomendations:

1. We recommend that the New York Psychiatrical Society affirm the general principle that the sick, whether in mind or body, should be cared for only by those with medical training who are authorized by the state to assume the responsibility of diagnosis and treatment.

2. We recommend that the society express its disapproval and urge upon thoughtful psychologists and the medical profession in general an expression of disapproval of the application of psychology to responsible clinical work except when made by or under the direct supervision of physicians qualified to deal with abnormal mental conditions.

3. We recommend that the society disapprove of psychologists (or of those who claim to be psychologists as a result of their ability to apply any set of psychological tests) undertaking to pass judgment upon the mental condition of sick, defective, or otherwise abnormal persons when such findings involve questions of diagnosis, or affect the future care and career of such persons.

CHARLES L. DANA, *Chairman*,
ADOLF MEYER,
THOMAS W. SALMON.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

CONSCIOUSNESS—WHERE IS IT?[1]

I SUPPOSE that even a behaviorist will recognize a difference between having a toothache and seeing (or, perhaps, hearing) your neighbor have a toothache. This difference I shall call the difference between the point of view of the agent—or, it may be, the patient—and the point of view of the observer. And in attempting to show where consciousness may be found, I shall take as my point of departure the agent's point of view rather than the observer's. Not, perhaps, because consciousness may not be defined and distinguished by an observer, but because it can not be distinguished by an observer unless he is also an agent.

This is my objection to the method of distinguishing consciousness by reference to the specific mode of response belonging to creatures having a nervous system. What is this specific mode of response, and how does it differ from the responses of waterfalls and steam-engines? It seems that those who resolve consciousness into a specific response are unable to specify the response; and I believe that they could not distinguish conscious from unconscious responses without presupposing just that "inner" point of view which they seek to define away. I can imagine a similar problem. Suppose that we are asked to explain the difference between written language and other marks that may be made upon paper. The answer may be that language is made up of the specific marks, or relations of marks, that have meaning. But, of course, any marks whatever may have meaning—if only we have found the point of view of the person to whom they are significant. There is no specific grouping of marks necessarily peculiar to language. Neither, I venture to say, is there any specific form of reaction peculiar to a nervous system. The sounds uttered by the creature with the nervous system may be English, Chinese, or mere gibberish. To one who already attaches meaning to them, they indicate consciousness; and to him they are also specific. To any one else they are not even specific. Gibberish, for example, is never specific.

[1] Read at the meeting of the American Philosophical Association, Columbia University, December, 1916.

Accordingly, in seeking an answer to the question, Consciousness —where is it? I have in mind, at the outset, at least, not so much my neighbor's consciousness as my own. Where, in the world of my experience, do I find what I call my consciousness? First I shall reply, Not in any so-called "mental states," as distinguished from corresponding physical things—not in any specifically "mental" images, sensations, impressions, or presentations. That is to say, I agree with those who hold that when we perceive a chair, what we have before us is not a perception of a chair, but a chair. And I should say the same thing of memory of the past. When I remember what happened last Christmas, I do not have a "mental image" of last Christmas, by means of which I arrive at the real events of last Christmas; on the contrary, I am living in last Christmas, in the same way as I am living in to-day. In other words, I find in my experience no series of "inner experiences," such as Kant assumes, which are distinct from a parallel series of "outer experiences." My perception of things is not a perception of perceptions, but a perception of things.

And if I do not find my consciousness in any such mental states as "perceptions" or "presentations," neither do I find it in any other mental states, called feelings or emotions. Those who fail to find their consciousness in perceptions may take up as a second line of defense the position that, at any rate, in their emotions they have something peculiarly and exclusively mental. If they have no cognitive states which are numerically distinct from the object known, at least they have other mental states to which there is no corresponding object whatever. It seems to me, however, that after James's theory of emotion this distinction is no longer tenable. James has shown, I should say, that emotion, whatever else it may be, is a consciousness of bodily movement. Now, the consciousness of bodily movement is by no means the same as unconscious bodily movement—just as the perception of a chair is a different fact from the unperceived existence of a chair. But just as the perception of the chair is not to be found in a state numerically distinct from the object chair, neither is the emotion to be found in any state numerically distinct from the bodily movement of which it is the consciousness. The point of the matter is that all consciousness is in varying degree—cognition more clearly and emotion less clearly—consciousness of an object. If we are seeking for our realities in clearly marked things, numerically distinct one from another, we are likely to find objects before we find consciousness. Indeed, as regards the prior immediacy of mental states, it strikes me always as an interesting reflection that, although everyone seems to know what we mean by a chair, no one seems to know what is meant by an idea of a chair.

Where in the world, then, is consciousness? I state the question thus, because I wish to ask in reply, Where in the world is it not? When I turn once more to the familiar chair and attempt to describe it, the first thing that I find is that it has legs, arms, back, and seat—very human attributes. And if I try again, resolved now to describe the chair in terms wholly impersonal—well, I seem to find no terms which, in the last analysis, are really impersonal. If, for example, I discard the word "legs" for "uprights," I am reminded that things are upright or the reverse only in relation to the position of the human body. In brief, I can frame no description of the chair without making it to be an object qualified by the fact that it is humanly known. This means that I find consciousness in the chair.

This is, perhaps, to repeat the more or less familiar doctrine that consciousness of the chair is to be found in the meaning of the chair. The use of the term "meaning" raises, however, an important question. Does the meaning of the chair leave the chair unaltered? Those who define consciousness as a relation, and meaning as a relation—the relation, namely, between an object and a living organism—insist also that all relations are external: consciousness of the chair leaves the chair unaltered. Now, as a matter of fact and experience, it is only for the observer—and for him only relatively—that the chair remains unaltered; when I explain the working of an automobile or of a typewriter to a supposedly uninformed neighbor the object is constantly changing for him while it remains nearly the same for me. It is thus an external observer's point of view that is quietly presupposed in the doctrine of external relations and in the definition of consciousness as a relation—as if, somehow, the facts of our world, which each of us perceives for himself, could only be described in the way that they appear to other persons; or, perhaps, to no real person whatever. And it is this point of view which makes consciousness as a relation seem unrecognizable as consciousness. If consciousness is nothing but a casual relation between an object and a living organism, then surely the neo-realists are right in saying that consciousness is not more important than other relations. But it seems to me that we must then go further and ask why the term "consciousness" was ever invented, and why this relation is worth any consideration whatever.

What I would point out, then, is that, from the point of view of the person who is conscious of an object, the meaning of an object is not extrinsic, or additional to, or separable from, the object itself. The chair as perceived is not independent of the meaning of the chair. The chair does not remain the same, for the same person or for different persons, while the meaning changes. The structural detail of the chair is not a constant fact while our idea of its function varies. Nor,

again, is the perceived chair an entity; the meaning, however, a non-entity. Whatever an entity may be, the meaning of the chair is as much or as little of an entity as the perceived chair; for what we perceive varies strictly with the meaning we are able to assign to it.

I find it difficult to illustrate this point forcibly in the case of the chair, just because, in civilized life, the chair is a universally familiar object, which each of us, so far as memory extends, has always known, and the meaning or function of which has remained virtually constant. To measure our consciousness of the chair we should have to compare what we ourselves see in a chair with what is seen by a primitive man who is confronted with a chair for the first time; let it be remembered that to an uncivilized person the function of this piece of furniture is by no means necessarily obvious. We may, however, compare the chair as seen by a mechanically intelligent person with the chair as seen by one, perhaps of the opposite sex, who has no mechanical interest. Suppose I ask such a person how the back of a given chair is supported against the strain imposed by the back of the sitter—obviously, this is one of the chief problems in the designing of a chair. Is the back of the chair of one piece with the back-legs? Or is it a separate piece, and braced? Or is it of one piece and also braced? These, of course, are matters of perception; yet I think you will agree that these questions will elicit various answers, and that the answers will vary according to the ideas possessed by the respondent of the function of the parts in question.

Suppose, however, we take an object which each of us remembers having learned to know. I began to use a typewriter, say, five years ago. I can not now remember how the typewriter looked to me then. But if after the first presentation I had been asked to draw from memory a detailed picture of the typewriter, I am certain that, beyond the general shape of the machine, I should have been able to give you little more than the keyboard and the platen, or roller. My idea of a typewriter was thus little more than an impression of a vague mass of mechanism, of a certain shape, which served the purpose of writing. My picture of a typewriter to-day, though still more or less impressionistic, would be obviously much richer in detail. This difference represents, then, not merely a difference in "knowledge about" the typewriter—to make use of James's distinction—but at the same time a difference in "acquaintance with" the typewriter; it is a difference of perception. Indeed, one way of stating my point is to say simply that acquaintance with an object can not be independent of knowledge about it. Nor can knowledge about be independent of acquaintance with. For, while my perception of the typewriter has developed in the multiplication and in the coordination of details, my conception of its function has similarly developed.

In noting one by one the several devices—for example, for beginning a new line, for changing from lower to upper case, or for shifting the carriage so that letters shall not overlap—I have come to realize more clearly just what a writing machine has to do.

And indeed it seems that, for the person who is learning to know an object, meaning and perception, structure and function, *must* go together. Here, for example, is a certain plug at one end of the carriage which, it turns out, regulates the space between the lines. Now, I may contemplate this plug vaguely, or I may perceive it exactly. But I can not perceive it exactly without noting its connections and its precise setting; and in a perfectly clear perception of the setting, the function is *ipso facto* revealed.

The chairs and the typewriters are things of human use, and we know that a meaning has been put into them. Our consciousness is found, however, in the meaning that they have for us, as percipient subjects; and therefore the same analysis applies not less—or perhaps I should say, only less—to the objects of nature, for example, the mountains and the trees. The distinction of mountain and valley, however correspondent to outer fact, holds its place in our consciousness by virtue of the fact that, given our human powers of locomotion, the valleys are the great arteries of culture and communication. From the point of view of civilization the distinction of mountain and valley is vital. To the geologist it is relatively insignificant—a mere detail in the crumpling of the earth's crust. To the astronomer it counts for nearly nothing, except as the mountain furnishes a convenient site for an observatory. Apart from this consideration, an astronomer, really absorbed in his subject, might be supposed to be as imperceptive to the distinction of mountain and valley as Hegel is said to have been to the Battle of Jena.

And the trees. This illustration, as it happens, suggests to me another way of putting the matter. We can not disentangle our consciousness from the object so as to view it alone; neither can we disentangle the object from our consciousness. For suppose we ask what is the real tree, as viewed by impersonal science. Now, the aim of impersonal science is to get its object wholly disentangled from the subject, wholly divested of qualities that imply a human interpretation. If, then, we regard the tree as an organic unity which expresses a certain arboreal principle of life, it seems that we have not yet reached the impersonal view—certainly, if we judge by the general hostility of biological scientists towards vitalistic theories and their steady search for a mechanical explanation of life. But if we treat the tree as a mechanism, we seem driven in the end to define it as a collection of atoms. And then we face the question, What marks off the collection? In human experience the tree stands alone, in an

empty field; for impersonal science the same tree is only a part of a sea of atoms which includes the air as well as the tree. The atoms composing the tree are doubtless nearer together; and to us men this means collision and resistance when we try to walk through them. But imagine to yourself a physicist of divine insight, a physicist whose thought were so perfectly learned that with the vulgar he could not even speak. To him, it seems, the distinction of solid tree and empty air must be wholly insignificant. To him the tree and the air would be alike simply an expanse of atoms; and, having no scientific reason for distinguishing the specific differences of condensation and rarefaction, he could not even see that the atoms were differently grouped. In brief the tree must be to him, at most, what the man in the moon is to us—merely a convenient fiction; and if we are to speak of entities, then a nonentity, or nothing.

But I shall not myself say that the tree is nothing; or that it is nothing but consciousness. If consciousness is to be distinguished from the object, the object must be no less distinguished from consciousness; all that I say is that, from the point of view of the agent, they are not separable. If we look for the object in some separable, impersonal, non-conscious, non-human, and non-significant element, or "entity," in our experience, we shall never find it.

This brings me, however, to a general statement of my thesis. Hitherto I have kept in mind the point of view of the agent; and perhaps I have invited the objection that the existence of this point of view—or, for the matter of that, the existence of any points of view—is just the point in question. Very well, then: having obtained the facts which the point of view has to offer, we may now, if we like, pour the contents of all points of view into a loosely general world of fact and note simply a broad outstanding distinction. Everything in the world, we may say, undergoes two sorts of changes. (1) On the one hand, it suffers the changes that I have noted in my typewriter; that is to say, it passes from a thing of indefinite parts, or aspects, incoherently related, to a thing of relatively definite parts, coherently related. These changes it undergoes when brought into relation with some particular percipient agent—they represent the agent's view. (2) But on the other hand, it undergoes changes which seem to be independent of its relation to a particular agent. The real typewriter, as we call it, was never vague, never indefinite, and never incoherent; as an objective fact it is at any moment simply what it is; neither indefinitely nor incoherently so, nor yet, indeed (if our description is to be strictly objective), definitely or coherently. The changes which the real typewriter has undergone are somewhat as follows: the frame has lost some of its varnish; the parts are worn—which means that they now weigh less; and they have accumulated

dirt and rust. Such changes are irrelevant to changes in definiteness and coherence. Now, the series of changes indicated under (1) is consciousness. Viewing them as items in a general world of fact, and ignoring the point of view in which they are given, we shall have to say that these are changes in the typewriter quite as much as the changes of wear and tear; for apart from the typewriter they do not occur. If, then, we are to locate consciousness in a world of general fact, we must say that in these changes of the thing known we find our consciousness.

To characterize this conscious side of things I might perhaps use the word "meaning." But this word, as I have suggested, fails, as it is now used, to suggest with sufficient clearness that meanings, so far as they are meaningful, are personal; or that they are also bound up with changes in the object. The term "control" I reject as insufficient, because it seems to me to suggest, from the standpoint of a biological pragmatism, that consciousness is not for itself, but for something else; or that consciousness is exclusively forward-looking. From the standpoint of keeping the body alive, it may be that the future alone is relevant and real; but from the standpoint of the conscious realization of life, the past may be even more real than the future.

It seems to me that the peculiarity of the conscious side of things is best expressed in concrete terms by the words "familiarity" and "intelligibility" and by the contrast suggested by their opposites, "strangeness" and "opacity." I add familiarity to intelligibility because the intelligibility that I have in mind is personal intelligibility. Everything in our world has a certain degree of familiarity and intelligibility. That which is wholly foreign and inscrutable lies beyond our ken; at the most it gives us a vague impression of "something there." On the other hand, everything has a certain strangeness and opacity; in everything we reach a point at which it ceases to be transparent and intelligible. In the familiarity and intelligibility of things we find our consciousness and ourselves; in their strangeness and opacity, the limitations of our consciousness and of ourselves.

I know of no more striking illustration of the presence or absence of consciousness than in the changes which come over a place which is now familiar, but which was once unfamiliar. On the first day of a four-months' stay at Stanford University several years ago a colleague invited me to walk in the surrounding country. I returned with a few memories of details, a general impression of loveliness, and a vague, and largely erroneous, conception of geographical relations. In the course of many walks afterwards I gradually arrived at a clearer picture and a more exact orientation. But I had always

difficulty in adjusting my clearer knowledge of details to the ideas formed on the first day. This is a common experience. After becoming familiar with a place—or with a person—we always wonder at our first impression. "It is not the same place." And the point of the matter is that it is *not* the same place. The place has not merely "acquired an aspect of familiarity"—an aspect superimposed upon an otherwise unchanged content—but the place itself has changed. Yet all the while it has not, perhaps, "really" changed. The changes that go with familiarity mark the progress of consciousness.

To conclude, then—to the question, Where in the world is consciousness? I reply, Where in the world is it not? I have tried to show that consciousness is not "in the mind," but in the world; but, on the other hand, that consciousness is really in the world, and everywhere in the world. So far as the world is familiar and intelligible, there we find our consciousness and ourselves; and what is absolutely unintelligible is not in our world. Consciousness is not a casual relation between supposedly impersonal things. It is not a mere "relation" between "entities" more substantive than itself. In speaking of consciousness as a series of changes observable in things I have been adapting myself to what seems to be now the conventional necessity of using phenomenalistic language. But if I may use the realistic language which I prefer, I shall translate the series of changes into persons and say that persons are as real as anything else. In the familiarity and intelligibility of things I find myself; but I am myself no less substantive an entity, and no less of an immediate and original fact or phenomenon, than the things with which I am familiar.

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THE NATURE OF THE PSYCHICAL[1]

IN undertaking to discuss the topic selected by the committee for this occasion I wish to take advantage of the enabling clause which states that "no restriction is placed upon the freedom of participants in the discussion to attack the general problem by any methods which seem to them suitable—provided only that they establish some definite connection between their contribution and the recent reflection of others upon the subject." The "recent reflection of others" which I propose as my theme is the drift of neo-realistic speculation towards behavior as the key to the mystery of consciousness, and my special task will be an elaboration of the implications that seem to be contained in this tendency or point of view.

[1] Read at the meeting of the American Philosophical Association, Columbia University, December, 1916.

An approach to the problem of consciousness from the side of behavior is confronted at the outset with the necessity of choosing between two alternative modes of procedure. On the one hand, we may undertake to mark off the significant and differentiating features of the behavior called conscious by assigning to it a character that makes it qualitatively or generically different from other forms of behavior. On the other hand, we may attempt to minimize or rule out significant differences of this kind and attempt to place the distinctiveness of conscious behavior in the kind or the range of objects to which the organism responds. The latter mode of procedure is plainly involved in Holt's doctrine that consciousness consists of a certain cross-section of the environment, which is selected or marked off by a "specific response" of an organism, the specific response being defined as "a reaction which is definably distinct from its reaction to any other entity whatsoever."[2] Why the response in question is limited to the behavior of organisms is not altogether clear, since the reaction on gunpowder to the spark or of the anvil to the descending hammer would seem to be quite as specific as that of living organisms. Waiving this question, however, we encounter the more serious difficulty that the specific response apparently need not be a response to an *object* at all. The specific response is no doubt a response to something, but there is a significant difference between response to a mechanical stimulation, such as ether-waves, and response to a perceived object. This difference, it is evident, does not correspond to the distinction between the agency immediately affecting the sense-organs and some other more remote agency in the series of causes leading up to the final stimulation. To go back of the immediate stimulation in the series of causes would lead into an infinite regress, and any selection of a cross-section or set of objects as *the* object of response would be purely arbitrary. Conscious behavior, in so far as it is conscious, is not response to a causal agency at all. It is not response to something that precedes the response in the temporal order, but is response to an object or situation that is simultaneous with the response. The object of the response is something now present, and not something of an earlier date. On the other hand, the response, in a case of mechanical reaction, appears to be a response to a causal agency and nothing more. There is no response to an object, as distinct from causal agency, save as an object is conveniently provided by an obliging bystander. That is, the response to an object is to all appearances quite different from the response of mechanical reaction, and it is precisely this differ-

[2] *The Concept of Consciousness,* p. 180.

ence which must be emphasized and defined if we are to obtain a significant definition of conscious behavior.[3]

In support of the view that conscious behavior is of a distinctive kind it is possible to cite statements by other neorealistic writers, though at the risk, perhaps, of being reminded that even the devil can quote Scripture to his purpose. "Content of mind," says Perry, "must be defined as that portion of the surrounding environment which is taken account of by the organism in serving its interests."[4] In Marvin's language, "If an animal's reaction can be accounted for wholly by the chemical-physical effect of an object acting upon it, we should regard the reaction as a mere tropism or reflex. But if we could show that color, as color, or some relation between color and things implied by color (*e. g.*, a red flag as a sign of danger) controlled the reaction, we should have to call it conscious."[5] The statement that an organism "serves its interests" or that it reacts to "color as color" or to something "implied" by the color means either that the behavior is not mechanical or else that it is interpreted in terms of the aims and motives of an outside observer. The "interests" or the "something implied" are either not present at all in the sense suggested by the language of the quotations or they are present as future contingencies which have become concerned in giving direction to present behavior, which is to say that the behavior in question differs in an important respect from the mechanical behavior of purely reflex responses.

That conscious behavior differs in a significant way from other modes of response is suggested further by a consideration of the different ways in which the organization of the response is secured. In the case of reflex behavior the organization is provided by circumstances or agencies that date back to a remote past. The ability to execute adaptive movements of a reflex kind is a part of the equipment with which we are endowed from the start. In conscious behavior, on the other hand, the form of organization is dependent upon the exigencies of the moment. When the need arises, different and relatively independent forms of response or systems of discharge are brought together so as to constitute a unified form of behavior which will further the adaptation of the organism. These forms of response which furnish the material for the organized total response

[3] The tendency to rule out significant differences is characteristic of Holt's entire treatment. Thus the temporal order becomes just an instance of the logical, timeless activity of the neutral entities; error is explained as just a case of conflict or interference; and volition is a law and nothing more. With all allowance for the ingenuity of treatment, there is considerable ground for the suspicion that our problems are solved by being huddled out of sight.

[4] *Present Philosophical Tendencies*, p. 300.

[5] *A First Book in Metaphysics*, p. 262.

may have been acquired during the lifetime of the individual, and they may be responses either for complex objects, such as houses, trees, and automobiles, or for qualities like colors, sounds, and smells. Taken by itself each of these forms of response is presumably a physiological unit, like the reflex arc, but in the experiential situation it is associated with other such units so as to form a more complex total response. The form of organization for this total response is not determined by a mechanism antecedently provided, but has a peculiar flexibility, so as to suit the needs of the occasion. The process of organizing the different systems of discharge into a unified mode of response is directed towards the end of securing adaptation. That is, the activity is neither predetermined by inherited structure nor left to the mercy of chance association. The activity has a destiny and an aim, which means that there is present some sort of selection from among alternative associations or courses of action. In writing a letter, for example, or in untangling the line of our fishing-rod, we are somehow controlled by an end, and at no point is it possible to withdraw this control and leave the completion of the act to the mechanism of the bodily reflexes. The organization of the activity must be provided for continuously and is nowhere laid down beforehand by inborn connections within the nervous system. It is this organization of relatively independent systems of discharge, and not specific response as such, which constitutes the characteristic feature of conscious behavior.

This contrast between conscious and reflex behavior, it will be observed, presupposes the familiar doctrine that consciousness has its origin in the state of inhibition or tension which arises when a stimulation calls forth a number of conflicting responses. A new form of behavior appears, precisely because the mechanism of the reflexes has proved insufficient for purposes of adaptation. A new principle of organization or a new mode of procedure has accordingly become necessary; and this new principle consists essentially in a mode of organization that is directed or controlled with reference to an adaptation that is still to be secured. But if a future adaptation is to determine the character of behavior, it is necessary to take account of the meaning or adaptive value that the nascent activities would have if they were released and allowed to run their course. Regarded merely as mechanical reactions, these nascent responses are more or less on a par and constitute an equilibrium of forces. From the standpoint of possible or future adaptation, however, they may be widely unequal. The possible future result of our acts, therefore, must be brought into the present so as to provide the conditions for behavior that has reference to these results; and this peculiar transfer of the future into the present is accomplished in the conscious

situation. The various systems of neural discharge which enter into the given situation and which have become severally organized as a result of previous happenings, are, in a sense, a record of the past, but by virtue of this fact they are likewise a forecast of the future. The flame, for example, which has once burned the fingers, the rock which has once inflicted a bruise, the lump of sugar which has once gratified the palate, work a change in the nervous system, so that similar objects are greeted with a different organic response on all subsequent occasions. When the flame or the rock is again presented, the organism acts as though it were suffering the corresponding kind of injury, before the injury has actually been inflicted; and in a similar way the act of eating is rehearsed before overt action begins. By thus keeping a record of the happenings which it undergoes, the nervous system is able to report in advance, as it were, what may be expected of objects when they recur. The flame is something that will burn the fingers, the rock is something that will bruise, the sugar is something that will furnish nourishment. The perceptions corresponding to these inhibited reactions embody the adaptive value which these nascent activities would have if they were completed; they forecast the possibility of future stimulations and thus transcribe or translate into terms of present fact the conditions which must be taken into account for further adjustment. The perceived object, accordingly, is the environment in the guise of a condition for further activity. Generalizing this result, we may say that all consciousness is behavior directed or controlled by the environment with reference to a future result or a future adaptation.

As long as the individual is concerned with familiar objects or qualities, conscious behavior is able to proceed with a minimum of attention. We avoid obstacles in our path or seat ourselves on a chair with little effort in the way of determining more in detail the conditions that must be taken into account. Similarly the pencil on the table is picked up for purposes of writing, is put into the pocket, or is pushed aside, according to the nature of the occasion, but none of these possibilities is surveyed with care before the act takes place. Yet the perceived object, as determined by the character of the neural response, embodies certain possibilities or alternative forms of behavior, since otherwise the response would have the fixed character of reflex activity, and perception would not occur. Since consciousness is by hypothesis dependent upon the presence of conflicting responses, some transformation of the object or situation is necessary, some act of attention must occur. The precise nature of the situation must be determined more adequately, and this need may result in a more or less elaborate scrutiny. Before using the pencil to write, for example, we may pause to note its length and to observe whether it

has been sharpened properly. The same process may, of course, occur as a result of idle curiosity and with no thought of using the pencil for writing. In this event the pencil controls behavior by holding out a promise of release to certain activities of eye and hand. In any case the object or situation controls behavior by bodying forth the results of activities which are as yet in abeyance. And this interpretation applies equally, though perhaps less obviously, to qualities like colors and sounds. The process by which we learn to see colors is a process that involves a progressive building-up of complex forms of response. But the colors doubtless *feel* different from the start, which means that the different stimulations set off specific reactions. As an example of such specific reaction, in exaggerated form, I may cite the classic instance of the red rag and the bull. These reactions may tend to heighten or to lower organic activity, *i. e.*, these activities would be good or bad if permitted to run their course. It is in reactions of this kind, presumably, that we may expect to find a clue to the explanation of the esthetic qualities of colors. In the course of time a more or less elaborate form of response is built up for a given color, as in the case of more complex objects; and this response has embedded in it a host of associations, so that the perceived color furnishes the organism with a handle, so to speak, to a considerable range of further possible adaptations. In the case of memory there is a partial reinstatement of a previous response, but this reinstatement is of necessity fragmentary and determined by the circumstances of the moment. The earlier situation is not reinstated in all detail without modification; and, moreover, the recollection is tinged by association with events which happened subsequently, but which were future to it at the time. So far this description applies pretty directly to other experiences as well; the peculiar quality of pastness is perhaps due to a conflict between the physiological tendency towards total recall and the activities of the present moment, which is reflected in the experience of the event as irrecoverable, as past and gone. As long as we are on the plane of remembering, the present situation is necessarily different from the previous one; the greater our success in recalling the past the more complete is our failure to reinstate it. At any rate, recollection, like perception, apparently embodies or forecasts the outcome of nascent responses and thus shares in the function of exercising control over further behavior.

The nature of this control has already been indicated. To give attention is to respond to a result more or less dimly foreshadowed at the present moment; the situation as given needs to be enlarged or transformed, and this opens the way for the response of eye or ear or reflective thinking. Conscious behavior, accordingly, is a constant search for new stimulations or a progressive transformation of the

given situation so as to remold it nearer to the heart's desire. As contrasted with reflex action, conscious behavior is essentially experimental; its method is, at bottom, the method of trial and error. In listening to a noise, for example, the given fact which directs further behavior is indubitably a noise, but the precise character of the noise, as the noise of a passing street-car or the rumble of distant thunder, is still a matter for further determination. The reference of the noise to a source is temporarily suspended; the noise as heard is held on probation, as it were, pending the outcome of further listening. As a consequence there arises a contrast between what is given and what is still uncertain; and this contrast, it seems, is the basis of the distinction between the object and the mental or psychical. As Dewey has pointed out, the psychical in this sense is correlated with "intra-organic events, adjustments *within* the organism, that is, adjustments of the organism considered not with reference to the environment, but with reference to one another."[6] The psychical or subjective is not a distinct entity or existence, but is a necessary incident, phase, aspect, or "moment" of all conscious behavior. It is a name for any fact or set of facts with reference to its status as material for more complete determination in the interests of adjustment.

In conclusion I may add that the position so briefly and dogmatically outlined is in entire agreement with the view that the problem of consciousness must be attacked through a consideration of the facts of behavior. If, however, a consideration of these facts is to be significant and enlightening, it is the difference rather than the likeness between conscious behavior and mechanical or reflex reaction that must be emphasized and interpreted. And this difference, as I have ventured to urge, lies in the reference to future results or ends. An interpretation along these lines enables us to avoid the pitfall of historic dualism and gives promise of securing to intelligence its rightful place in a world where ends or purposes are genuine and distinctive factors in the processes by which living organisms maintain themselves and convert the resources of a changing environment to their use.

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[6] *Essays in Experimental Logic*, p. 227. *Cf.* also Dewey, "Perception and Organic Action," this Journal, Vol. IX., p. 645; and Mead, "The Definition of the Psychical," *Decennial Publications of the University of Chicago*, Vol. III.

THEORY AS TRUTH: A CRITICISM

I WISH to point out what seems to me certain fundamental difficulties in a well-written paper in a recent number of this JOURNAL.[1] The thesis to be established is that theory, the last stage in knowledge of the scientific type, the other two of which are guesses, possible knowledge or hypotheses, and laws or probable knowledge, is as true as fact.

The first difficulty and the one which might cover all the others is the assumption, common to those of the idealistic persuasion, that truth is a completed totality of subject-matter. This assumption in itself might be accepted on condition that nothing more be said, but something more is said; therefore the difficulty. Assuming the totality, how is it possible to admit of the question as to the genuineness or of the hypothetical nature of the same? It is assumed as genuine, certainly, and on such an assumption the problem of error can not be admitted. In other words, knowledge can not be of the three degrees —possible, probable, and fact—on the assumption of a completed totality. If a completed totality is true, then we have in advance all that we can ever hope to get by following knowledge through the "stages"; if it is an hypothesis, if it is a guess or possible knowledge, we can not use it as a means of testing the other stages or as a limit to which knowledge approaches.

Coming to the more specific questions in the paper, we find that, though the nature of the case forbids that questions of theory can be answered by facts, "when the theories which answer them, however, are submitted to the scrutiny of logic it appears . . . that they have a certainty of the same order as that of *any bit of experience.*" Logic, that is to say, is taken from the completed totality and is made a standard by which the totality itself is measured, with the result that certainty of the same order as that of any bit of experience is reached. The certainty of immediate experience is the criterion for judging of the certainty of something avowedly not immediate, something "that we can never hope to reach with our senses, with matters beyond the reach of immediate experience." It is by no means clear what is involved in the term "certainty" when we speak of certainty in any bit of experience.

Another question is the relation between hypotheses and theory. When are we to know whether we are dealing with an hypothesis or with a theory? Is this which I have before me (a scientist might ask) a theory, a law, or an hypothesis? The scientist can not be trusted to give us accurate information, for "theories have not been defined." One test is "workability," but this is not *the* test, for theories "pos-

[1] Vol. XIII., p. 236.

sess a certainty wholly beyond that inherent in their workableness." The nature of this certainty, wherein it consists, how it is known, how we get at it, we are not informed except with the general remark that theory is as true as fact. Just how true a bare fact is does not answer a question, but states a problem. It may be that logic is the test, for theories are "logically different from laws and hypotheses." To say, however, that a square is logically different from virtue, does not give us much information either about a square or virtue. A system may be logical and still not be true. One might build up a system on any chosen set of axioms. Logic certainly can not dictate the kind of world we shall have, for life is bigger than logic.

How do theories come to be, how do we get them? "The experiment of Young [on light] *'properly interpreted'* would have led to a certain theory, a certain truth—the undulatory theory of light." One way at least to get truth is to interpret an experiment properly. The question and the whole point is to determine a proper interpretation. It can not be "workability," for there is something "inherent," but what this "something" is we are left to imagine. If we imagine it to be consistency, the reply might be made that consistency applies to error as well as to truth. If we imagine a completed totality of subject-matter, we are assuming the very point we are seeking to make and are consequently dealing with guesses or hypotheses and not with theories. We can not reach theories by induction, because induction gives us laws only.

After the fact we may look back and see that our hypotheses were not true, but *before the fact,* they surely seemed true or they would not have been projected. Before the fact the "certain wholly beyond that inherent in their workableness" was a doubtful sort of certainty, but after the fact—after the crucial experiment—the doubtful certainty grew large and would never have been otherwise had the former experiments been "properly interpreted."

We are told that scientific facts and laws or sets of laws render certain a truth. "Another law is discovered which renders certain a little more of the truth and does away with part of the over-belief. When enough laws have been discovered, the situation becomes closed—within this small area we have truth—within these limits there is nothing more to be said." If the history of philosophy has taught us anything, it surely has taught us to regard "this small area" with suspicion. How many "truths" can we put our fingers on that are "fixed"—that never have been reconstructed and modified, and further that never will be? As a matter of practise, we have learned that our ideas are all hypotheses, that they are satisfactory plans of behavior *thus far,* but we have no lease on the future.

Enough laws, we are told, close a situation, but it seems that we have never found enough laws in the whole history of thinking to close any question. About the time we get settled to a transaction of business, a Copernicus or a Darwin steps in and destroys all the old stock in trade.

In Part III. we have theory defined—"the conditions without which a certain law, or set of laws, could not even be possibly true. It is *this* that is as true as a fact. If we attempt to carry this definition into any concrete case of science, we are in the predicament of having so much on our hands that we can do nothing with any of it. If we were called upon for the conditions without which the laws of color vision, for example, could not even be possibly true, we might give answers running in scope all the way from Mexican revolution to the existence of God—either, the sun, a nervous system, stimulus, retina, and a thousand of other things, the absence of any one of which would spoil the whole performance. That which is as true as fact turns out to be so general that it covers all particulars and consequently gives us no clue to a determination of any one.

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REVIEWS AND ABSTRACTS OF LITERATURE

Hauptwerke der Philosophie in originalgetreuen Neudrucken. Band V. *System der Logik.* JACOB FRIEDRICH FRIES. Durchgesehen und mit gänzlich neu bearbeitetem Namen und Sachregister herausgegeben von der Jakob Friedrich Fries Gesellschaft. Leipzig: Verlag von Felix Meiner. 1914. Pp. xx + 454.

Of late it has been frequently noted that contemporaneous philosophic thought consists very largely of the revival, in more or less fragmentary fashion, of classic philosophies. We have current disciplines derived from Kant, Fichte, Hegel, and Reid, and the recent publication of the second series of the *Abhandlungen der Friesschen Schule* attests the fact that interest has been renewed in the philosophy of Fries. Since Fries's logic incorporates a considerable portion of his philosophy,[1] a reprint of his treatise on logic will be welcomed; and perhaps an added interest is due to the criticisms of Fries in the volume of Bolzano's *Wissenschaftslehre* reprinted as Volume IV. in the preceding series.

Fries's position, which has been described as empirical idealism, is perhaps most easily penetrated by inquiring into his concept of science. A whole of knowledge, ordered and complete with regard to the subordination of the particular under the general (§§ 19, 66) is

[1] *Cf.* Walter Mechler, *Kant Studien, Erganzungshefte* No. 22.

called, with reference to its form, a system and with reference to its matter, a science (p. 206). Such a whole consists of principles or supreme universals, that is, *fundamenta*. Scientific knowledge, then, is a system of principles. The doctrine of the whole of knowledge in its relation to the scientific whole is developed in Sections 78, 79.[2] In Section 111 Fries classifies sciences with respect to certainty, attributing the same objective validity[3] to assertory cognitions of empirical facts and apodictic cognitions of general laws.[4] Thus, narrative sciences such as history and descriptions of nature possess the same complete certainty as mathematics and philosophy; discursive sciences such as psychology and experimental physics are less certain, being dependent upon probabilities (pp. 372, 246–249). With this classification it is natural for Fries to associate a theory[5] of probability[6] including mathematical probability (§§ 100–102) and philosophic probability (§§ 103–105) and error (§§ 106–110). In Section 113 Fries discusses the reduction of knowledge to principles. In particular, he points out that immediate knowledge is the constitutive principle of a science as distinguished from the logical and the anthropological. To illustrate, the constitutive principle of pure mathematics is pure perception, *e. g.*, in geometry, the perception of infinite space; the anthropological principle is the productive imagination[7] as the faculty of mathematical perception. The logical principle of a mathematical discipline consists of its fundamental concepts, axioms, and definitions. The simplest (pp. 208, 209) and most evident (p. 241) principles are the mathematical (p. 410). Fries's discrimination (p. 316) between knowledge as completely certain and knowledge as dependent upon probabilities is precisely his distinction between the immediate cognitions of reason and the mediate cognitions of the understanding which, as he explicitly states (p. 259) is of a generality unknown to Kant.

Fries's concept of logic is determined by a formal subdivision (p. 248). Sciences of reason are divided into mathematics and philosophy; these may be either pure or applied. Philosophy is the science of mere concepts; mathematics is the science of the construction of concepts in pure perception. Corresponding to Kant's analytic and synthetic judgments (pp. viii, ix) philosophy is subdivided into logic and metaphysics. This distinction is explained in

[2] *Cf.* pp. 230, 370, 373, 374.

[3] *Cf.* p. 243.

[4] *Cf.* pp. 244, 245.

[5] *Cf.* J. F. Fries, *Versuch einer Kritik der Prinzipien der Wahrscheinlichkeitsrechnung.* Braunschweig, 1842.

[6] Part II., Chapter III.

[7] *Cf.* pp. 45, 46.

pages 129–132. Logic is the science of concepts springing from reflection; metaphysics is the science of concepts springing from immediate pure reason. Logic is either pure or applied. The pure is subdivided into the demonstrative (formal, philosophical) and the anthropological (historical). The formal logic is dependent upon the anthropological (pp. x, xi). Fries maintains, in opposition to Kant, that it is quite impossible to set up formal logic apart from the anthropological (pp. 4, 5) and consequently he would hold that formal logic in its more highly specialized form, namely, the algebra of logic of Boole, Peirce, Schroeder must remain artificial and one-sided. One recalls here Windelband's criticism[8] of Boole's *Laws of Thought*. Following the preceding classification, Fries discusses anthropological logic (pp. 24–125), philosophical logic (pp. 129–221), and applied logic (pp. 240–449). The part devoted to applied logic is divided into three sections; these deal, respectively, with the relation of thought to knowledge, the elucidation of knowledge, and the theory of method. The doctrine of method is intended to amplify the theory of Kant (p. vii); whereas in the first part of the applied logic the theory of feeling of Jacobi is adapted.

The principal question of logic according to Fries is: "What are concepts, judgments, inferences, system?" To answer this question Fries develops a theory of representations (ideas) and their abstraction and comparison. This exposition is highly psychological. He describes a representation as an activity of mind which belongs to knowledge (cognition). It will be quite impossible to proceed with Fries's classification of representations without devoting an excursus to Fries's theory of cognition, especially the doctrine of the upper and lower currents of thought, which is fundamental for his entire development.[9] The inner stream of thought (p. 52) consists of two currents. The upper or voluntary current is determined by reflection; the lower or involuntary current is determined by association. The faculty of reflection is the understanding; the sole function of the latter is the repetition of that which is given by reason (p. 132). Somewhat differently expressed, the purpose of thought (p. 54) is to bring back to consciousness cognitions we have "in us," that is, the essence of thought is the repetition of cognitions given by the reason. Contrasted with the preceding faculties of knowledge (association and reflection) are the immediate faculties of cognition, namely, the pure consciousness of self, mathematical perception, and pure reason in a restricted sense (§ 11). Self-cognition presupposes the entire

[8] W. Windelband, *A History of Philosophy*. Translated by J. H. Tufts (second edition), pp. 629, 639. Windelband's remark is somewhat analogous to Matthew Arnold's view of mathematics as contrasted with "fresh learning."

[9] § 19; *cf.* pp. 127, 259, 269, 275, 316, 341, 370, *etc.*

content of "our" knowledge (pp. 240, 241) and is identified with consciousness (p. 38); it is the pure consciousness of self qualified by the sense-perception of the inner sense (p. 39). The reason is the source of the sense-perceptions and consequently of empirical knowledge and as pure reason is the source of the apodictic laws of mathematics and philosophy (pp. 421, 258). The reason is the immediate spontaneity of knowledge; the faculty of reflection is mediate. On this assumption Fries bases his distinction between perceptual and conceptual knowledge (pp. 63–66). Abstraction[10] and comparison, corresponding to the lower and upper currents of thought are associational and reflective, as is also relation.[11]

Fries's classification of representations may now be set forth. Every representation has a dual aspect: subjective, *i. e.*, the act of representing, and objective, *i. e.*, that which is represented (p. 25). With regard to their objective aspect representations are either problematic (mediate) or assertory (immediate). The object[12] is the individual determined by an assertory representation; *e. g.*, "a triangle," "this triangle," "every triangle" denote objects, but not "triangle" which is a general representation (§ 22, p. 271). Subjectively, representations are either dark or clear (§ 9, p. 35). The immediately clear are called perceptions and the mediately clear are called conceptions (p. 64). Conceptual representations, in turn, are either dark, clear, or lucid (§ 23). The source of clear representations is threefold: sense-perception, mathematical perception, pure reason.[13] Underlying mathematical perceptions are representations of space and time (§ 16) and at the basis of the representations of pure reason are the representations of synthetic and analytic unity which spring from the spontaneity of reason (p. 69). The abode of the dark representations appears to be the lower current of thought.[14] The term "latent" seems preferable to Fries's "dark"; presumably Fries means by dark representations those which are not explicitly recognized. Between the immediately clear and mediately clear representations are the esthetically lucid representations based on feeling.[15]

In Fries's classification of representations, it must be confessed, there is much that is unnecessarily psychological and burdened with difficulties analogous to those attached to the "inner sense," "understanding," and "pure reason" of Kant. Genetically, Fries's

[10] *Cf.* Meinong, "Abstrahieren und Vergleichen," *Zeitschr. für Psychologie und Physiologie der Sinnesorgane*, Vol. XXIV., p. 72.

[11] Pp. 48, 67, 74, 87, 88, 113.

[12] Pp. 27, 55, 276, 371; §§ 29, 37.

[13] Pp. 53, 54, 242.

[14] *Cf.* pp. 42, 43, 268, 269, 276.

[15] §§ 80–82; p. 273.

discussion seems inadequate; for his development of a clear representation from a dark one is not evolutionary; representations, clear or dark, are "in us"; a dark representation is merely one that is not perceived by the inner sense (pp. 38, 40). This position in its non-creative aspect seems Platonic. The preceding defect of Fries is further emphasized by his concepts of new and invented representations. The former "penetrate us" favored by sense-stimulation (p. 40); the latter are merely variously ordered repetitions of given representations, *i. e.*, are combinatory[16] in a mathematical sense.[17]

The domain of a representation is applied by Fries only to concepts. The latter are classified (§§ 20, 26) with regard to "magnitude" (p. 76) which is either intensive or extensive. The intensive magnitude of a concept is called the content (*Inhalt*) and the extension of a concept is called the domain (*Umfang, Sphäre*). The form of the domain of concept is of mathematical origin.[18] With regard to the domain of a representation a very marked and valuable advance over Fries was made by Bolzano.

In the gradation of the clearness of representations reference was made to feeling. The distinction between feeling and concept Fries regards as one of the most important in philosophy; their confusion has resulted in mysticism.[19] The concept as a mediate representation is dependent on perception and feeling. Feeling is one of the activities of the faculty of judging.[20] In Section 84 a doctrine of truth-feeling is developed; three kinds of feeling are mentioned, two of which are not subject to error (p. 341) and are immediate, unanalyzable. The mediate truth-feelings are mainly the expressions of practical tact and conscience and are analyzable into inferences; here again reference is made to the upper and lower currents of thought (§ 19). It seems worth while to recall here the *dunkles Vorgefühl* mentioned by H. Grassmann in the philosophical introduction to his *Ausdehnungslehre.*

In an elaborate discussion of error (pp. 340–369) Fries holds that the immediate cognitions of reason are free from error; that error in logic consists of erroneous judgments[21] and thus depends upon (incomplete) inferences of probability (p. 316). In Section 109, which is devoted to paralogisms, Fries remarks: "Important explicit rules for avoiding these mistakes can not, in general, be given." Cer-

[16] This seems to be the ordinary chess-board theory of mathematical novelty; *Cf.* W. F. Meyer, "Kant und das Wesen des Neuen in der Mathematik," *Archiv der Mathematik und Physik,* Vol. 8, 1905, p. 287.

[17] Pp. 46, 62, 70, 72, 409.

[18] P. 385; *cf.* p. 246.

[19] Pp. 241, 363, 379.

[20] § 82; *cf.* p. 321.

[21] *Cf.* p. 341: "dark inferences."

tainly, since Fries's time, a remarkable advance has been made through the work of Zermelo[22] and Russell,[23] who have constructed theories for the evasion, at least, of antinomies.

Representations may possess truth, for in the earlier part of his treatise (p. 26) Fries states that the objective validity or truth of assertory representations consists in the agreement of the being of things with their representation. In Section 94, however, this explanation is pointed out as useless for logical purposes. The truth of assertory or empirical knowledge (§ 77) is the agreement (pp. 308, 309) of mediate with immediate knowledge. The real truth of judgments is distinguished (§ 42) from the formal truth or consistence of representations. Elsewhere[24] Fries says that the truth is judgments is conformability to law in "holding-to-be-true."[25] Independent of the truth of logic is the truth of reason, which consists of the agreement of knowledge with its object. The apodictic cognitions are subjectively universally valid (pp. 243, 372); empirical knowledge is subjectively contingent, since its objects vary with the individuals.

The designation of representations by means of symbols forms the subject of an instructive chapter (pp. 277–297). Fries carefully points out that in philosophy the notations are the ordinary signs of language, namely, words, and that attempts, *e. g.*, by Leibnitz, Wolf, and Schelling, to designate philosophic knowledge by means of schematized representations analogous to the mathematical are doomed to fail. This reminds one of the mathematicians' lack of appreciation of the verbal technique of philosophers.[26]

Plainly, the nucleus of Fries's development is found in the opposition "mediacy" and "immediacy"; this is applied to clearness (§ 5), faculties of cognition (§ 11), representations (§§ 19, 22), synthesis (p. 85), cognitions *a priori* (p. 245), faculty of judging (p. 269), symbolic representations (p. 284), *etc.* The preceding opposition is, of course, of interest at the present time.

Fries is[27] an initiator of critical mathematics. In a recent address Fries's mathematical notions have been summarized by

[22] *Mathematische Annalen*, Vol. 65, p. 261.

[23] *Principia Mathematica*, Vol. I., p. 63; *American Journal of Mathematics*, Vol. 30, p. 222.

[24] § 106, p. 340.

[25] *Cf.* pp. 93, 118–119, 319.

[26] See, for instance, E. Study, *Die Realistiche Weltansicht und die Lehre vom Raum*, p. 22; Bergson, *Revue de Mét. et de Morale*, Vol. 16, p. 32.

[27] *Cf.* G. Hessenberg, *Sitzb. der Berl. Math. Ges.*, Vol. 3 (1903), pp. 21–28. This mathematician is one of the editors of the present series of the *Abhandlungen der Friesschen Schule;* the well-known mathematician Schlömilch was one of the editors of the former series.

the mathematician L. Koenigsberger.[28] Remarks on mathematics are closely woven into Fries's exposition of logic, no doubt in attempted conformity with the dictum that "an uncompromising mathematical spirit is the only preparation for the entrance of correct philosophy" which "has to do with the nature of things" (§ 40). Apparently Fries conceives of mathematics peculiarly as a science of quantity,[29] an interpretation which has been rejected by Boole and more recently by others,[30] such as Russell. Fries describes the philosophy of mathematics as an inquiry into the significance of mathematical knowledge in the whole of "our" convictions (§ 99 and p. 378). Harmonizing with Fries's remark[31] that errors are sometimes made in philosophy and mathematics, two mistakes in his treatise must be mentioned. The Kantian doctrine that there is only one space and one time is endorsed, although Fries rejects (p. 58) Kant's definition of time as the form of the inner sense. The Kantian theory of space has been widely rejected[32] and even the neo-Kantian restriction of Kant's space to the Euclidean seems inadequate. What seems to be the proper modification of Kant's space is suggested by the fragmentary conceptual space[33] which underlies the Euclidean, Lobatcheffskian and Riemannian spaces. A second error is Fries's confusion (p. 78) of continuity (see pp. 374, 375, 233) in a mathematical sense with density. This problem has, of course, since been solved by Dedekind, Cantor, Weierstrass in Germany and J. Tannery[34] and Méray in France.

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Advertising and its Mental Laws. HENRY FOSTER ADAMS. New York: The Macmillan Company. 1916. Pp. 333.

The psychology of advertising can thank Mr. Adams for a book containing new determinations of fact in surprising abundance. Experiments are given which are methodically correct and, for the most part, statistically sound, to show the number of items which can instantly be apprehended on a page; that the upper and left-hand part of a page is the first to be seen, and is best remembered; that attention is arrested by size almost in proportion to the size; that each

[28] *Sitzungsberichte der Heidelberger Akad. der Wiss.*, II.A, 1911, No. 9.

[29] See pp. 63, 409, 410.

[30] On the other hand, these more modern authors have phrased their definitions of mathematics too broadly, ignoring the necessary *numerical reference* (mediate or immediate) of mathematical conceptions.

[31] *Cf.* pp. 319, 372.

[32] See E. Study, *loc. cit.*, p. 68; O. Hölder, *Anschauung und Denken in der Geometrie*, pp. 3, 26.

[33] This JOURNAL, Vol. 11, p. 173.

[34] In the first edition of his *Theory of Functions of a Real Variable.*

successive appearance in repetition commands less attention; that orange, red, blue, and black are the first colors to catch the eye; that if pictures of various objects are put in competition with mere patches of color the pictures of shoes and stockings are the only ones which can win the attention away from the colors; that whole pages are remembered better than a number of immediate repetitions of smaller advertisements sufficient to fill the same space, but not so if the smaller units are variations from one another instead of mere duplications; that when general terms like "shirt" or "soap" are given there are an astonishing number of association-responses containing the name of some one well-advertised product; that the attractiveness of a food advertisement is enhanced if it is presented in the company of other advertisements of foods; that the right-hand page arrests attention and is remembered better than the left; that photographs are better remembered than drawings, but that pictures of persons must face the right way in order to be remembered. There is a thorough treatment of the pleasingness of colors, and of line, form, and mass. Together with this remarkable array of new experimental findings there are liberal quotations from the work of Strong, Hollingworth, Scott, Gale, Starch, Shryer, and Münsterberg.

In view of the value of these contributions students of the psychology of advertising can afford to overlook, though they may not relish, a very inadequate attempt to present some of the fundamentals of psychology to the lay public and occasional lapses such as the statement that "in the eye are still other special structures, called end organs, some of which are stimulated by rays which produce impressions of red, others of yellow, others of green, others of blue, others of white and still others of *black.*" On the other hand, it can not be expected that practical advertisers will be equally charitable toward an academic writer who gives such evidences of carelessness as the statement that "it must be borne in mind that a mail-order business appeals to a very small number of persons at best," or who describes an advertisement in which the picture of a white refrigerator was printed on *yellow paper* in order to bring out by color contrast a pure, cold white, or who, after a few quotations in the introductory chapter, makes the remark that "the general conclusion which we are forced to accept by these considerations is that advertising will pay if it is done correctly." There is a brief chapter on the different kinds of mediums which is utterly inadequate, devoting eight lines to outdoor advertising and five to letters and catalogues, but which concludes, nevertheless, by declaring with finality, that "their good points and their bad points, from the psychological side have been pointed out."

The attempt (one of the three aims set forth in the preface) to

establish a relationship between experiment and practise in advertising limps forlornly for want of data on the side of practise.

Great stress is laid upon Hollingworth's experiment with abstract appeals and the author's repetition of it. "It may be considered as showing the relative strength of the various interests of the subjects when *they are in the advertising frame of mind* (author's italics) which is exactly the sort of information the advertising man should desire. This frame of mind is brought about by the fact that they know they are being experimented upon in an advertising experiment." Yet at another point there is a general indictment of the whole order-of-merit method upon which this experiment rests, for "the general conclusion which we seem forced to accept is that the order-of-merit method is not a very adequate method of testing the business value of advertisements. Where it is possible to obtain accurate business measurements, the laboratory test, using students as subjects, appears to be quite inadequate."

On the whole, in spite of the very great value of Mr. Adams's original experiments, his ineptness in presentation can hardly fail to arouse in practical advertisers distrust and antagonism not only toward his book, but in general toward all experimental investigations of advertising. This result is very much to be regretted, for an adequate realization by the business community of the possibilities latent in such investigations would certainly lead to great economies.

The illustrations in the book are few and poor in quality; there are textual references to some which do not appear.

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The American College. Edited by WILLIAM H. CRAWFORD. New York: Henry Holt and Company. 1915. Pp. 194.

The scope of *The American College* is well described by its second title as "a series of papers setting forth the programme, achievements, present status, and probable future of the American college." The book is composed of eleven papers read at a Conference on the American College held on the occasion of the celebration of the one-hundredth anniversary of the founding of Allegheny College. The papers were read by President Faunce, of Brown University, Professor Shorey, of the University of Chicago, Dean Haskins, of Harvard, Professor Conklin, of Princeton, President Rhees, of the University of Rochester, President Thwing, of Western Reserve University, Commissioner Finley, President Few, of Trinity College, North Carolina, President Slocum, of Colorado College, and Commissioner Claxton.

The names of the writers of the papers included in the volume are almost sufficient guarantee that the book would exhibit vigorous thought and felicitous expression. There is, as is to be expected, considerable repetition of the basic conception that the American college as a separate and distinct educational institution finds its chief mission in the preparation of men and women—mainly men, to be sure—not for making a living, but for living a broadly conceived, intelligently directed, nobly motivated, and socially devoted life. And it is just here that a suspicion of Phariseeism in the papers creeps into the reader's mind, as the impression is sometimes given that the college alone is devoted to such a noble aim; for what agricultural and mechanical college or most cumbersome and comprehensive state university would not express this as the most important aspect of its complete ideal! But this impression is quickly dispelled by the balanced, thoughtful, and thought-provoking presentations of the claims of languages, literature, and the physical and social sciences to be the core of a truly humane education and of the college to be a fitting instrument for its achievement. There is little in the book of the spirit of mere self-commendation and there is much of the spirit of crusade against contemporary materialism and commercialism, for which the titular leaders draw inspiration out of a truly distinguished spiritual ancestry.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. November, 1916. *Jus Naturale Redivivum* (pp. 761–777): MORRIS R. COHEN.—That the reassertion of "Natural Law" in a form in harmony with modern thought is scientifically possible, "I shall try to show by a critical examination of the four usual arguments against the theory of natural law, namely, the historical, the psychologic, the legal, and the metaphysical." *The Problem of Objectivity* (pp. 778–787): ALFRED H. JONES.—Two attempts, that of Reid and that of the new realists, have been made to apply the German method that thought and reality are one to the British problem of objectivity. Reid in his constructive work drifts back into the abandoned doctrine of ideas. The new realism is not incompatible with teleological idealism. *The Origin and Development of Persons* (pp. 788–800): ERNEST A. RAYNER.—The difficulty in earlier accounts of personality lies in the exclusive use of the methods of logic. The attempt is here made to explain personality in the light of evolution. "As the genetic contribution can not complete the statement of the problems of personality, neither can the logical statement make a beginning without the genetic approach." *The Non-Sensuous Knowledge of Reality* (pp.

801–817): L. P. CHAMBERS.—A study in neo-realistic epistemology with special reference to the "neutral stuff" theory of Holt as developed in his "The Concept of Consciousness." There follows an enumeration of the puzzling situations explained by such a conception. *The Relation of Personal to Cultural Ideas* (pp. 818–836): CHARLES E. HOOPER.—The topics herein discussed are: Social logic *versus* solipsism; terms, ideas, and object-matter; the logical extension of ideas; standard cultural ideas; concrete and abstract ideas, as related to subject and predicate, respectively; the implication of ideas, cultural and personal; the cultivation and weeding out of ideas; ideas of causation and ideals. *Notes: Josiah Royce.* CHARLES A. BENNETT.

Leibnitz's *New Essays Concerning Human Understanding,* translated by A. G. Langley. Chicago and London: Open Court Publishing Company. 1916. Pp. xix + 861.

Mercier, Charles A. On Causation and Belief. London and New York: Longmans, Green, and Company. 1916. Pp. xii + 228. $1.40.

Temple, William. Mens Creatrix. New York and London: The Macmillan Company. 1917. Pp. xiii + 367. $2.50.

Werner, Charles. Etudes de Philosophie Morale. Genève: Librairie Kundig; Paris: Librairie Fischbacher. 1917. Pp. 249. 3 Fr. 50.

NOTES AND NEWS

THE *Revue de Metaphysique et de Morale* for January, 1917, contains a sketch of the career of Théodule Ribot (1839–1916) from which the following statements have been extracted. Ribot began his professional career as professor in various *lycée.* In 1872 he gave up teaching to devote himself entirely to the new studies of which he had just outlined the programme in the preface to *English Psychology of To-day.* This incisive document which had considerable vogue with the new generation separates sharply psychology as science of facts from such nominative sciences as logic and ethics and from metaphysical speculations. He had in mind especially the thin and unsatisfactory analyses of the eclectic school, the rather conventional description which took into account only the white and civilized adult. The same criticism had been expressed in other lands, but what distinguished Ribot's conception and made his work effective was to see among all possible lines of investigation the one which led most directly to effective results, namely, the study of pathological cases. *The Diseases of the Memory, of the Will and of Personality,* which appeared in a number of editions, showed at once

how much in the way of discovery might be expected along these lines, and gave French psychology its superiority for a considerable time. After a long period wholly devoted to research he realized the utility of again taking up teaching. Professor of experimental psychology at the Sorbonne from 1885 to 1888, then at the Collège de France, 1888 to 1902, he became interested in various subjects of which the traces are found in his books on *Attention,* on the *Psychology of the Emotions,* on the *Evolution of General Ideas,* on the *Imagination,* on *Psychologie Affective,* and on the *Logic of the Emotions* (which he insisted was, in spite of its title, a chapter in psychology). All these titles are far from making a complete catalogue of his works. He did not, however, like either speaking in public or the preparation of his courses, which he gave only for practical reasons, because he saw in them the means to a quicker diffusion of new ideas. He had announced for a long time that he would not keep a professional position when he had passed the age of 60. Almost on the very day he gave up without regret his chair at the Collège de France. It is true that he left it to be occupied by Pierre Janet, on whom he could depend for the future of his work, and he saw himself replaced at the Sorbonne by Georges Dumas, another of his pupils and a not less devoted follower. From this moment he devoted himself to the labors of the *Académie des Sciences morales et politiques,* of which he had been a member since 1899, and to editing the *Revue Philosophique* which he had founded in 1876, the same year in which *Mind* was launched.

THE Southern Society for Philosophy and Psychology held its twelfth annual meeting on April 12 and 13, 1917, at Randolph Macon Woman's College, Lynchburg, Va. It was voted to extend the scope of the society so as to include "experimental education," and to hold the next meeting at Peabody College for Teachers, Nashville, Tenn. The following officers were elected: President, Professor E. K. Strong, Jr., Peabody College; Vice-president, Dr. T. V. Moore, Catholic University of America; and Secretary-Treasurer, Professor W. H. Chase, University of North Carolina. The newly elected members of the council are: Dr. Tom A. Williams, Washington. D. C.; Professor F. B. Crooke, Randolph Macon Woman's College, and Professor Knight Dunlap, Johns Hopkins University.

DR. GEORGE R. WELLS, associate professor of psychology in Oberlin College, has been appointed to a new professorship in psychology in the Ohio Wesleyan University, and will assume his duties in September. A psychological laboratory, housed in a separate building, has been provided and is being equipped at the latter institution.

MRS. CHRISTINE LADD-FRANKLIN gave three lectures on "Logic" at Columbia University on April 30, May 1, and May 2.

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ONTOLOGICAL PROBLEMS OF VALUE

I

FOR one who takes a large enough view, the relation of value to reality is one of the central problems of philosophy as it presents itself to-day. As a matter of fact it has always been so. If reality, or "true being," has been said to be the goal of reflection, it is because it has always been assumed that reality and value are ultimately one, or at least inseparably connected.

This seems to be an ineradicable postulate of our thought. We find reality intolerable without raising it to the sphere of value; but we also find it very difficult to think value without its implying reality and without giving it some form of being. If, then, the center of gravity of philosophical thought has recently consciously been moving from being to value, it is merely because that which has been hitherto tacitly assumed, is now explicitly recognized.

Yet, as I have sought to show in an earlier paper, "Value and Existence,"[1] precisely on these fundamental questions our thought is at present most incoherent. When it is possible for the same thinker to say, almost in the same breath, that value exists and that existence is a value,[2] he may indeed be giving expression to this ineradicable postulate of thought, but he can scarcely claim to have made himself very intelligible. That "values" are real in some sense, few would deny. Whether this conviction be expressed in the bald statement of the pragmatist, that "values exist like other qualities";[3] or in more guarded statements such as, "the good that one aims at must be known to him, otherwise he could not aim at it or intend it, and being known to him, it must have some reality and existence;"[4] or again, even more generally still, "when we have value, and in so far as we have it, we have implication of reality,"[5]—in every

[1] This JOURNAL, Vol. XIII., pp. 449–452.
[2] *Op. cit.*, p. 449.
[3] "Value and Existence," p. 457.
[4] F. B. Jevons, *Philosophy, What Is It?*, 1914, p. 104.
[5] B. Bosanquet, *The Principle of Individuality and Value*, p. 317.

case the conviction itself is the same. The difficulties arise when we seek to make our conviction articulate and our expressions intelligible. To this task we must now turn.

A large part of the work preliminary to such an undertaking has already been done. The contradictory views as to the relation of value to reality, noted in the paper already referred to, were seen to be due in large measure to equivocations in the concept of value itself and to consequent definitions of value in terms of quality or relation. We found that value is ultimately neither—neither a quality nor a determination of being, but a unique and independent form of objectivity. With these conclusions many of the difficulties of the problem disappeared.[6]

But at best only a part of the work has been done. If the contradiction and incoherence of which we justly complained are partly due to ambiguities in the value concept and to untenable definitions, they are no less due to equally serious ambiguities in the concepts of existence and reality. It is not accidental that, as in one of the statements quoted, we so often say "real or existent *in some sense.*" In this use of ontological predicates discretion is doubtless the better part of valor—and the discreet philosopher will enter this field of discussion only with the greatest caution, but I do not see how such discussion can be avoided. I will therefore attempt, as briefly as possible, some classification and analysis of these notions of existence and reality. First as to the notion of existence.

II

We have already found it useful to distinguish between "narrower" and "broader" views of value. We also find a similar equivocation in the concept of existence. For the narrower view existence has a very definite and specific meaning. It is sharply distinguished from other possible forms of being, such as, for instance, subsistence or essence. Temporal determination is its *sine qua non,* and at most there are only two kinds of existence, physical and psychical. Existence *for* mind or will is "pseudo existence."[7] For the broader view, on the other hand, existence is much more liberally conceived. It may include, as in a recent presentation of this view,[8] immediate existence, mediate existence (physical and psychical), *gegenständliche* existence or subsistence, logical existence

[6] *Op. cit.,* p. 464.

[7] Meinong. Also B. Russell, *Problems of Philosophy,* p. 155.

[8] Marbe, *Vierteljahrsschrift für Wissenschaftliche Philos. u. Sociologie,* 1912, XXXVI., Heft 2, a most valuable discussion. Also, J. M. Baldwin, *Dict. of Philos. and Psych.,* p. 421, on "Existence," as "denoting determination or givenness in a context, by which its meaning is largely determined." So used also throughout his *Genetic Logic.*

or validity, and imperative existence, or the existence of norms and values for will. In general, the idea of existence varies all the way from the narrowest of conceptions to one so broad that it "degrades" existence to a general character of all objects. On the latter view, to say that a thing exists is meaningless until it is said in what way or what sense it exists.

It is not necessary to decide between these two views at this point. It is sufficient to recognize them and to bear in mind that our conception of the relation of value to existence must necessarily be determined by an acceptance, conscious or unconscious, of one of these views. Now let us consider the concept of reality.

The two concepts, existence and reality, are often used interchangeably. Royce, for instance, explicitly asserts[9] that he will so use them. But surely, if such procedure does not presuppose an entire philosophical theory, it at least implies the "broader" concept of existence. It is sufficient here to note that if one accepts the narrower view, he must of necessity distinguish between existence and reality. This, many, including the scholastics, have found it necessary on occasion to do, saying that the essence or subsistence of a not yet existing, but "genuine future fact" can be called in some sense real apart from existence. We can hardly deny reality to an event in the past, although it no longer exists. Its one-time existence gives it reality. But this independence of space and time relations can be carried further. An object such as a table, that has not yet existed and does not now, is forever and fundamentally different from, let us say, similarity and difference which subsist, but in the nature of the case never can exist. "Reality" is thus widened to include, beside existence in the narrow sense, the concept of potential existence.[10]

It is, however, doubtful whether we can, except quite arbitrarily, stop at this point. There are many who hold that, without violating our feeling for reality, so to speak, we can not refuse to include what is called subsistence. Thus Külpe[11] finds the real in the immediately given, in which, then, existence and subsistence are to be distinguished. So also Lessing[12] refuses to deny reality to subsistent objects, insisting that "it will not do to call numbers, for instance, *daseinsfreie Gegenstände.*"

Partly as a consequence of these difficulties, and partly for other reasons which will appear in the sequel, there is a third concept of reality fairly constant in the history of thought, and differing vitally

[9] J. Royce, *The World and the Individual*, Vol. 1, p. 51, note.

[10] Meinong, in numerous connections.

[11] *Die Realisierung.* Also Russell, *op. cit.*, p. 157.

[12] *Studien zur Wertaxiomatik*, p. 19. So also Wodehouse, *The Presentation of Reality*, seems to demand this broader conception of reality, holding that it is coextensive with presentation and recognizing various universes of reality.

from any of the preceding. In the first place it recognizes none of these limitations. "Reality" has a meaning not to be identified with any one of these retrospective definitions, nor with all of them taken together. It is rather, as one writer has phrased it, "an attribute which plain man and philosopher alike predicate of objects to which they ascribe especial importance." A eulogistic, value-connotation is inseparable from the notion. It can not be used *except* invidiously, except in contrast with the "ideal" or what not, which thereby becomes unreal. It is applied now to one, now to another, of the definitions of existence examined, but this application is invariably guided by a conception of importance. Without these distinctions, being is applicable to all objects whatsoever, but the concept has then become meaningless. "What is important is necessarily essential and what is essential is real." Or, as Euchen has phrased it, "for an ultimate reflection reality and value are identical, since the highest object of such reflection is just the full ground of the value of existence." With the recognition of this value connotation, inseparable from the notion, comes the further conception of degrees of reality.

With these varying conceptions of existence and reality the reader is, of course, entirely familiar. He is aware also that to them are in large part due the confusions in value theory and that they must be taken into account in any attempt to disentangle the difficulties which beset the problem of reality and value.

III

So much by way of preliminary. Let us now turn to the problem itself. It has already been put before us in our original statement of the ineradicable postulate. As we find reality intolerable without raising it to the sphere of value, so we find it impossible to think value without its implying reality, or itself having some form of being. Let us consider the second part first. As thus stated, our problem is divided into two specific questions. They constitute precisely the two most discussed ontological problems of value, and the two, in our answers to which, we are most incoherent.

The first of these may be stated as follows: Is value dependent upon reality? Does value presuppose reality? To this question, as is well known, the answers are varied, depending upon the conception of reality held. For some (as we have seen) value is predicable only of *real* (existing or potentially existent) objects; for others any object, *merely as object,* may have value. The second question concerns the "reality" of value or values themselves: Do values exist? Have they reality? Here, too, the answers have been varied, depending upon the conceptions of existence and reality. It has been said: (*a*) they do exist; (*b*) they do not exist, but have subsistence; (*c*) they have neither existence nor subsistence, but are merely valid.

Both of these questions have indeed arisen in our earlier papers. In so far as certain conclusions followed from our analysis of value, they have been already stated. They were, however, tentative precisely in so far as the concepts of existence and reality still remained unanalyzed. It is necessary, therefore, to carry our study a step further. Let us then consider the first part of the proposition, that value presupposes reality, that "wherever we have value we have an implication of reality."

It is, perhaps, not wholly clear just what presupposition or implication means. We shall, however, probably not be very far wrong if we say that any element is presupposed which is not contained in the experience itself, but which appears in the epistemological, not merely psychological, analysis of the experience. Whether, indeed, there is an epistemological sense of the term other than the logical, or whether all cases can be reduced to the logical relation of part to whole, we may leave undetermined. In any case, the point here is that the analysis is not merely psychological. Does, then, value presuppose the existence of its object?

The classical statement of the affirmative position is, of course, Meinong's. I consider it epoch-making in the analysis of value, although it is not final, as our criticism will show. In the earlier form of the theory it was explicitly stated that value presupposes the *existence* of its object, or, in its psychological form, the feeling of value presupposes the existential judgment. I have already shown elsewhere that the statement can be maintained in neither form. With the psychological aspect we are here not concerned.[13] To the more objective phase of the problem we have already given a negative answer in the paper "Value and Existence." But for our present purposes the argument should be carried a step further.

Now it is, of course, true that any object to have value or be a value, as you please, must *be* in the sense of *being an object*. This is true however we may consider value, and whether we take implication in the psychological or logical sense. If we take existence in the broader sense the proposition is undoubtedly true, but it is meaningless. But this is obviously not what is meant. Taken in its narrower sense, however, existence is certainly not necessary. The untenability of this view is so generally recognized that I may perhaps be excused from laboring the point.[14] Without repeating the analysis here, we may unhesitatingly say that there are many cases in which existence enters only as an assumption. Is it not then possible to say that *potential* existence, or "reality" in the sense of the narrower definition, is still present as a necessary presupposition of value?

[13] For a statement and criticism of his view, see my *Valuation, etc.*, pp. 38–49.

[14] R. B. Perry, "The Definition of Value," this JOURNAL, Vol. XI., p. 151.

Meinong makes much of this concept of potentiality,[15] but his position, even with this modification, can not be maintained. There are several kinds of objects described as "ideal" to which even potential existence can not be ascribed, but to which it seems difficult to deny value. We may conveniently divide them into two classes: (*a*) those that by their very nature can not exist (in the narrow sense of the term), but which may be said to subsist; and (*b*) those that have neither existence nor subsistence,—"impossible objects." Let us consider the first.

In arguing against existence, either actual or potential, as a necessary presupposition of value, Perry remarks that "I may like two and two to equal four." Now for myself, I can find no meaning in this statement; the inherent absurdity in this form of expression seems to me fatal to the identification of value with "liking and disliking." But it suffices to raise the question. If our earlier studies are valid there can be only one answer to the question. Merely subsistent objects may undoubtedly have value. We need only note here the bearing of our results upon this specific point. In showing, as we have, the universality of the value category, that value is an *a priori* form of objects as such,[16] the value of merely subsistent objects is assumed. In showing that the relation "better than" is not limited to existent objects it was likewise implied.[17]

There is, however, another class of objects that presents very serious difficulties. In an earlier connection[18] I said, I was inclined to think that not even the subsistence of an object is necessary to its value. Indeed this is also implied in the principle of the universality of the value category. But for several reasons a more detailed examination of this point is also necessary. It concerns what are called "impossible objects."

The most remarkable and interesting of these are certain objects, ideals or limiting and regulative concepts if you will, in the sphere of ethical valuation. "Ideals" in general have the characteristic that they *are* not, but *ought to be*. Now many, perhaps most of these, are possible, have potential existence, but it is certain that some of them are not. They are what we call "impossible objects," inherently contradictory. Thus, for instance, the object, changeless or unmixed happiness. That it *is* an object is beyond doubt. I may think about and understand it, though of course I can not envisage it. Now it may well be that it is not only non-existent, but impossible. It may contain a contradiction in its very structure, and yet it also contains a

[15] "Für die Psychologie und gegen den Psychologismus," *etc.*, *Logos*, Vol. III.

[16] "Knowledge of Value," *etc.*, this JOURNAL, Vol. XIII., p. 675.

[17] *Ibid.*, p. 678.

[18] "Value and Existence," this JOURNAL, Vol. XIII., p. 464.

value connotation of which it can not be stripped. Of such objects—perfect happiness, or complete self-realization, it seems to me not senseless to say, though they are not, and indeed can not be (in any sense of existence), yet they ought to be.[19]

But it is not only in the ethical sphere that we find this situation. There are, for instance, such objects as a frictionless machine, *perpetuum mobile*. Impossible both perceptually and logically, they are yet so related to possible objects that the value of the latter in some way implies the value of the former. Science itself is full of such objects, of such fictions, as Vaihinger would call them. Imaginary quantities, the infinitely little, the ether conceived as perfect fluid or perfect jelly, are cases in point. Why or how this is so, is not so clear. Various reasons have been given. For the impossible objects of science the pragmatic explanation, with its concept of purely instrumental value, may perhaps be sufficient. For the so-called impossible objects of ethics and religion it certainly is not, as we shall presently see. All that we are concerned with here is the undoubted fact that impossible objects may have value. The value of an object persists where the being of the object can not be interpreted as existence, potential existence, or logical possibility.

So much, then, for the facts. Now for their bearing upon the "ineradicable postulate" with which we started. Shall we not draw the extreme conclusion (of Nietzsche, for instance, in the sphere of emotion, and of Vaihinger, in the realm of cool intellect), that there is no necessary connection between the value of an object and its reality? The conclusion seems inevitable. And yet I confess that, for myself, I can not be satisfied with it. I recognize that "there is nothing in the idea of value that requires the existence of actuality of its object,"[20] nothing indeed that requires its potential existence or logical possibility. On the other hand, I am equally impressed with the fact that, "when we have value, and so far as we have it, we have implication of reality."[21] For not only does interest, psycholog-

[19] The thought that underlies this apparent paradox is this. Approximations to these "ideals" are possible. But beyond any given happiness or degree of selfhood there is always a higher (with our way of experiencing is bound up the notion that beyond the valued thing there are objects of more and less value); and from the "better than" follows *a priori*, the ought to be. The impossible objects are bound up with the possible by the *a priori* value relation itself. Is it not, for instance, entirely possible to compare the intrinsic value of two objects even if both are impossible; to say that one is better than the other, or ought to be rather than the other? Thus taking the two ideals of unmixed happiness and complete activity, as in Paulsen's illustration of the drug, it would, I think, be possible to say that one ought to be rather than the other, even if both were impossible objects.

[20] Perry, *op. cit.*

[21] Bosanquet, *op. cit.*

ically, imply a presumption or assumption of reality, a "prejudice in favor of reality," if you will. The dialectical analysis of value notion itself shows it to be presupposed. It *lies in the nature of value as such,* as we have seen,[22] that beyond the valued thing there is always another object, more or less valuable, that given any two objects, one must be better than the other. From this it follows that one ought to be rather than another. Now we are compelled to will according to this *a priori* form of value. If the postulate were unrealizable, we should have an intolerable world.[23]

Lessing expresses this same point[24] by saying that the *existence* of a value (value object?) is *a priori* better than its *non-existence.* There are two questions which seem to be raised by this statement. If this is true, either subsistence must be reckoned as a form of existence (which Lessing does) or else timeless objects must be excluded from the sphere of values, for existence in the narrower sense does not apply to them at all. There are many cases indeed where the existence of the valued object is better than its non-existence, but there are also cases where, the existence of the object being impossible, the expression itself has no meaning. It seems clear then, that as it stands the statement is untrue. What it really registers is the ineradicable presupposition of reality in all value. This, I take it, is the true inwardness of the "ontological proof," the perennial revival of which would be a scandal of the most serious kind were it not just for the fact that it expresses something inherent in the notion of value itself.

Here, then, we have a real embarrassment of the value consciousness, if not an actual ontological antinomy of value. Several positions are here possible. We may say with Vaihinger that "this is just the tragic of thought, that the most valuable objects have, as reality, no value." We may, with Kant, add to the world of being as hitherto defined, a world of "practical reality." Or we may finally resort to a redefinition and analysis of the concept of reality itself. For the present I leave the situation as it is.

IV

Let us now turn to our second specific question in which the ontological problems of value come to the fore, and in which the incoherence of our thought manifests itself. Do values exist? Have values reality? If I mistake not the incoherence reaches its maximum here and, upon examination, will be seen to result from the same embarrassment, and to involve the same antinomy, which the examination of the preceding question disclosed.

[22] "Knowledge of Value," *etc.,* p. 677.

[23] *Cf.* my paper, "On Intolerables," *Philos. Rev.,* Sept., 1915, p. 492.

[24] *Studien zur Wertaxiomatik,* 1914, p. 21.

We find it difficult to think value without implication of reality, but we also find it equally difficult to think value without giving *it* some form of being. To the question, do values exist? we have also given an answer in our earlier studies, but here also the answer was merely tentative for the reason that we had not yet analyzed the concepts of existence and reality. Let us carry the study a step further.

Do values exist? The answers are, as we have seen, varied and contradictory enough. "Yes, emphatically," is one answer. "Yes, they exist if they are felt. Just as much as gravitation, pressure, collisions, exist." [25] On the other hand, just as emphatically, the existence of values is said to be a "nonsense." To ask whether values exist appears to Rickert[26] to be a sort of *pons assinorum* in philosophical thought.

The scandal of such a conflict of opinion is to my mind equalled only by its needlessness. The conflict is partly due, of course, to the confusion of "value" and "values" [27] and the dispute as to whether value is a quality or relation, or neither, but its ultimate source is in the equivocal meaning of "existence." For it is entirely clear that if we take existence in the sense of the broadest definition, as Sheldon, for instance, does, of course we may say that value exists, as does everything else in the world of objects. But our statement is wholly meaningless—until we say *how* it exists. On the other hand, if we take it in the narrow sense, which clear thinking seems to demand, value can not exist. The feeling of value exists. The qualities valued, sometimes called "values," subsist, as also the relation of "value for a subject." But value, as such, is simply valid. Now it is, to be sure, open to us to take existence in the broader sense, and to limit our statement by saying, values exist *for will*, or have "imperative existence." But in thus retaining existence it is difficult to meet the charges of those who maintain that we have thereby turned it into "pseudo-existence."

But let us be entirely clear in this matter. There is indeed a certain justification for this latter way of speaking; there can be no practical harm in saying that values exist when we mean thereby that certain feelings, sentiments, or demands exist. As we have seen, in our discussion of the objectivity of value[28] it is not fair to ask whether such values are relative to human feeling or objectively "real." They are both. When the social nature of valuation is considered, the alternative between objectivity and relativity to human feeling is wholly unsound. But it is evidently quite another ques-

[25] W. H. Sheldon, "The Empirical Definition of Value," this JOURNAL, Vol. XI., p. 123.

[26] H. Rickert, "Zwei Wege der Erkentnisstheorie," *Kantstudien*, 1909.

[27] "Value and Existence," this JOURNAL, p. 456.

[28] "Knowledge of Value," *etc.*, this JOURNAL, p. 681.

tion that is here at issue. Can we, with a proper sense of the meaning of the terms, speak of the "value objective" itself as existing, of this "validity," out of which oughtness springs, as a form of being, as "existence for will" or "imperative existence?" We can not, I think, without eviscerating the plain meaning of existence.[29] And if, philosophically speaking, we can scarcely say that value *exists*, there is just as little reason for saying that value *subsists*. At most we can mean merely that the qualities valued subsist, or the relation, "value for a subject." Strictly speaking subsistence for will is as contradictory as existence for will. Value itself is merely *valid*. That *is* its objectivity.

The answer to our second problem is then much like that to which we were led in the case of the first. It is difficult to think value without giving it some kind of being, and yet clearness demands that we should. The conclusion seems inevitable, and yet here also I find it impossible to be satisfied with it. Evidently the ontological antinomy of value has returned in a slightly different form. Rickert, who has perhaps carried out this last line of thought more consistently than any one else, apparently feels the full force of the difficulty. He recognizes that "it is the custom in philosophy to call any 'last principle' upon which philosophy comes, reality (*Realität*)." From the beginning the absolute is conceptually identified with the real. The word real when thus used is always used with "a certain emphasis." It is identified with the "highest, deepest, inmost, most essential or other superlatives beyond which nothing more is thinkable." To say, then, that the absolute value is merely valid and not real, seems to contain a contradiction in terms. We might choose for it perhaps the term, *Wert-Realität*. Nevertheless, Rickert continues to insist that clear thinking will not permit this, and is content to leave the antinomy as it is.[30]

[29] In this connection let me clear up a point which has been responsible for much of our incoherence in this matter. We speak of the "realization of value" of "bringing a value into existence." Does not this imply that values exist? But the slightest analysis will show that these are the crudest of conceptions. When I speak of bringing a value into existence, what I really mean is that the existence of some object is better than its non-existence, and that the object is brought into existence. Or again, an object is desired, or felt as a value, which was not before; a value is said to be brought into existence. Here again what is brought into existence is the desire or feeling, not the value. Of the existence of the object, or of the feeling to which it is related, we may speak, but not of the value. I had occasion to criticize Lessing's statement that "the existence of a value is *a priori* better than its non-existence." There we saw that, if by value he means valued object, it is simply untrue. We now see that, taken in its original form, it is meaningless.

[30] *Der Gegenstand der Erkentniss*, 3d edit., p. 360.

V

The problem of this paper is the relation of value to "reality." This, the ontological problem of value, we found could be conveniently divided into two specific questions, Does value presuppose the reality of its objects? Do values exist; are they real? To both these questions we have been able to give certain answers. They are briefly these. In so far as "reality" is limited to any of the narrower retrospective definitions—in terms of existence, potential existence, or subsistence, the answer to both questions must be negative. On the other hand, we have found, for equally good reasons, that value is inseparable from reality. Though we can not say that value necessarily presupposes either the existence or the subsistence of its object, we feel compelled to say that it presupposes reality. Though we can not say that value (properly speaking) either exists or subsists, we feel compelled to say that true values are real. Is there any solution to these antinomies of the value consciousness?

Now it is undoubtedly true that in general philosophers are only too ready to find antinomies where there are none. It is also true that apparent antinomies are often due to lack of definition and analysis. It may be so in this case. It may be that the "factual and apparent divorce between value and reality" (some aspects of which we have seen) "can not," as Bosanquet says, "be argued in support of the conceivability of a complete one."[31] It is conceivable that the fault is with our conceptions of "reality." It is entirely possible, at least, that this "prejudice in favor of reality" implicit in all valuation, and which survives all criticism, is wholly consistent with a true definition of reality. This is my own belief. In seeking to justify it I shall first present a line of reasoning which seems to me both new and important. It rests upon a deeper analysis of this "prejudice in favor of reality" itself.

An interesting use has been made recently of the expression "prejudice in favor of actuality" (*Vorurteil zu gunsten des Wirklichken*). It has been argued[32] that a natural prejudice in favor of existing objects has led us to ignore the importance for thought and knowledge of objects that merely subsist, that do not and can not have existence. It is chiefly owing to this prejudice that epistemological idealism is possible, and with it the concept of "existence for mind." There is clearly knowledge of what is non-existent, *e. g.*, mathematics, and since what is known does not exist outside of us, it must exist in our minds as thought. If all our knowledge were of existents, this would be scarcely possible. Now there is un-

[31] *Op. cit.*, p. 300.

[32] Meinong, "Uber Gegenstandstheorie," in the Grazer *Untersuchungen zur Gegenstandstheorie und Psychologie*, pp. 1–2.

doubtedly sense in thus speaking of a prejudice in favor of existence or actuality. Recognizing the great world of non-existent objects that yet have value for knowledge, it is indeed a prejudice that would deny them objectivity because they do not exist. But may we not carry this line of thought farther? Was it not a similar prejudice that led Plato to identify reality exclusively with essence? Here also that which is *important* is *ipso facto* real; not only real, but *the* real. If, then, there may be a prejudice in favor of either existence or subsistence, *may there not also be a prejudice in favor of both as exclusive forms of reality and as against other forms of reality?*

That this is so, that reality is not to be identified with either of these categories, may be seen from the following. We may indeed speak of a prejudice in favor of existence or subsistence; but can we with equal justice speak of a prejudice in favor of reality? To me it seems a contradiction in terms. I may well charge a man with prejudice in favor of one sphere or *aspect* of reality, but to charge him with a prejudice for reality as against unreality would seem to be an inanity possible only to a philosopher at his wits' ends. I can not, without just this inanity, turn a man's interest from real objects to unreal. If I seek to overcome his prejudice in favor of existent objects, I thereby assume that the non-existent objects are real in some sense. The eternal protest against any philosophy that calls the world of esthetic objects a world of unreality registers this fact. "The world of being, of universals," says Russell, "is delightful to all who love perfection more than life." In this there is perhaps an element of "private endearment," and it would indeed be a prejudice to identify reality wholly with this world, but surely it is sheer perversity to say that it is "*merely* an affinity which the human mind may develop to certain provinces of essence." Their value presupposes their reality. This prejudice in favor of "reality" is not a matter of mere "liking and disliking"; it is the *sine qua non* of all thinking *überhaupt*.

Is this line of reasoning sound? I think so. If it is, what are we to make of it? Several important consequences seem to me to follow.

In the first place, this so-called prejudice in favor of reality is *no* prejudice, but a necessity of thought. The eulogistic element in reality is indeed inevitable. "For an ultimate reflection reality and value must be identical, since the highest object of such reflection is just the full ground and value of existence." That the reality of value means its existence or subsistence *is*, however, a matter of prejudice. The difficulty of thinking value without reducing it to one of these forms of being is due to special preferences which, though practically and socially ineradicable, perhaps, are clear enough upon reflection.

But if this is so, something else follows. It is clear that "reality" can not be identified with "existence," potential existence, or subsistence, with any of them singly, or all of them taken together. It is clear also that the ontological predicate is meaningless until we state specifically the sphere in which it is applied, and that this meaning is always determined by some value the acknowledgment of which is presupposed. We are thus compelled to abandon the narrower conceptions of reality and to take the broader view already stated. Reality then becomes "a predicate which plain man and philosopher alike attribute to objects to which they ascribe a special importance." It is true that both plain man and philosopher identify reality, now with existence and possible existence, or again with essence. But if they do so, it is always by virtue of a special emphasis which has its justification in a certain evaluation. The meaning of reality can never be exhausted in any of these retrospective definitions with which it is on occasion identified.

This in turn leads to something even more important, I think,—a conclusion which constitutes the chief subject of discussion in this second part of my paper. This view of the ontological predicate seems to me to imply also the conception of the logical priority of value. The ontological predicate is meaningless except as its meaning is determined by the acknowledgment of a value presupposed. This is clearly but a technical way of stating the other half of the proposition with which we started, namely, we can not think reality ultimately without raising it to the sphere of value. We found it impossible to carry out completely the proposition that value implies existence or being. Is it not possible to establish the converse, that existence and being always imply value? Is not the coherence we are in search of attainable in this direction? Let us see.

VI

With certain forms of this conception the philosophical world is entirely familiar, pragmatism and the so-called imperativism of Windelband and Rickert. If I read them aright, in both cases one of the fundamental motives of these daring attempts to solve the problem is precisely the incoherence in our thought which has been emphasized from the beginning. It is for this reason that both have sought to change the center of gravity of thought from "being" to "value." Now that they have themselves not escaped incoherence, I have pointed out at several points in the earlier papers. The question is whether this concept of the priority of value, of reality itself as a value, can be stated coherently at all. For myself, I think it can.

In considering this question let us first note that the problem here raised is the converse of that of our third section. There we

started with the proposition that every value presupposed the existence (or reality) of its object, but upon examination, the value was seen to persist not only when existence, but also all the "narrower" conceptions of reality, were eliminated. Now we shall ask, to what extent the value implications in existential, or ontological judgments generally, may become potential or be finally suppressed, and their significance as judgments and predicates remain?

Without treating pragmatism too lightly, we may agree, I think, that the discussions which have raged about its devoted head justify our rejection of the view in this form. It is true, as I have said, that psychologically all existential and truth judgments have value references, but criticism has shown that they may become highly potential, very rarified indeed, and that all values, in the narrower sense (utility ethical, esthetic) may be eliminated. All except the value of truth itself, all interests except the interest in reality, the "*prejudice*" in favor of reality itself. It is probable indeed that an assumption of some value in the narrower sense is present (psychologically), but logically it is certainly true that I can want to know the truth without any reference to *this* value. How about the so-called value of truth? Here is the point at which imperativism enters. Happily for us, it has put the problem in a form precisely adapted to our method.

All judgments, it holds, that appear to refer to a transcendent being permit of a transformation—this is the important word—such that they merely assert facts of consciousness, and only in this form are they beyond doubt. Such transformations, it is held, can be carried out in the case of all judgments whatsoever, even perceptual (instead of saying the sun shines, I can say I see the sun), and the denial of a transcendent being never leads to contradictions *unless* (this is the important point) we deny the value, and consequent obligation, of making just this distinction. To deny this is to make all our statements meaningless. Here then is the point where our transformations must stop. This is the last element of "value" in our ontological predicates which can not be eliminated. Validity, the transcendental reference of truth, is the one absolute value upon which all these distinctions rest. The "transcendental minimum" *is* a value. What shall we say to this?

First of all it must be clear to the competent and candid critic that this putting of the position is not open to many of the criticisms that apply to pragmatism, nor, in general, to that superficial kind of objection which charges it with the romantic belief that "things must be beautiful and good in order to exist," or "whatever exists must satisfy us." But eliminating this kind of criticism, it is still a question whether the view will stand logical analysis. Now, I admit

without hesitation that the forms in which the position is usually stated, imperativism and voluntarism, present serious difficulties. The incoherence of pragmatism is patent. Desire and will are the presuppositions of existence and truth, for value here means a relation to desire and will. But, since desire and will are themselves existents, it can not be said that existence and truth presuppose value. Nor is the situation really different for imperativism and voluntarism. The latter, as we have seen,[33] does not escape psychologism, and it is doubtful whether imperativism is in any better case. You can not lift the *relation* of obligation or the act of will out of the sphere of existence merely by calling them over-individual, nor can you transcend psychology merely by prefixing the term transcendental.

But it is not at all clear that this is the only form in which the position may be stated. I have already insisted that the conception of value as a unique objective, the reasons for which have already been restated and need not be repeated here, escapes these objections. Still, granting this point, there remain certain logical difficulties.

For one thing, it is held that the structure of the concepts value and being (or truth) forbids either their identification, or the subsumption of one under the other. Non-existence and untruth are the contradictories of existence and truth, but negative value is not the contradictory of positive. In another connection we made use of this fundamental difference to show the impossibility of conceiving value as a form of being.[34] Is not this an equally effective barrier against subsuming being or reality under value? I think not. My reason for so thinking is the fact I have all along been insisting upon, namely, the double meaning of reality. There is one meaning, as we have seen, in which it is identified with one of the concepts, existence, subsistence, *etc.* (or perhaps all of them taken together). Now non-existence is the contradictory of existence, while negative value is not the contradictory of value. But there is a second meaning of reality according to which *un*-reality is not the contradictory of reality. The negative has rather the force of the negative in such concepts as *un*natural or *in*human. As in the very definition of natural or human there enters a value moment without which the negation is meaningless, so, as we have seen, in the ultimate concept of reality there is a eulogistic element that can not be eliminated. Any concept of "degrees of reality" implies this second concept of reality. There are certainly no degrees in existence or subsistence as such. If you identify reality with any one of these, nothing in the universe is more real than anything else. But there may very well be relations of degree between these forms of objectivity.

[33] "Value and Existence," this JOURNAL, Vol. XIII., p. 465.

[34] "Knowledge of Value," *etc.*, this JOURNAL, Vol. XIII., p. 680.

But leaving this point for the moment (I shall take up the question of degrees of reality at the close), let us examine a still more fundamental criticism. It is that this view, in any form, involves a circle. With the statement that truth and reality *have* value, we need not quarrel, the critics say. Nor indeed with the proposition that all true judgments *should* be affirmed. But from this we can not conclude that all judgments are true that should be affirmed, or that reality *is* a value. But suppose we admit that *only* a judgment that ought to be passed is true. What, after all, does "ought" here mean? It means indeed that a value is acknowledged; but what is this value? Is it not just what we have been accustomed to call truth? Have we not merely the tautology, true judgments are those that are true? If we seek to carry truth and reality back to value, do we not move in a circle, just as truly as we have seen we do when we seek to define value in terms of existence and truth?[35]

I admit that for a long time I believed this objection to be final. I am inclined to think now that there is no circle. It is, of course, patent in pragmatism. I think it is also present in imperativism and voluntarism. Acknowledgment of an over-individual obligation, or over-individual will presupposes, as has already been pointed out, a judgment of the existence of that will or the truth of that obligation. But I am inclined to think that the difficulty is not present if the conception of value as an "objective" is maintained. Then the judgment of truth or reality does not spring from the acknowledgement of an ought. Rather this acknowledgment of an ought follows because the value acknowledged is a valid objective. Prior to the obligation is the acknowledgment of the value objective.[36]

VII

Let us now return to the point from which this technical argument started. Our sole object was to bring some degree of coherence into our conceptions of the relation of value to reality. The present argument seeks merely to justify the "logical priority" of value, the belief that the concept of reality contains an implication of value that can not be eliminated. Every value, we found, presupposes the reality of its object. Yet we could eliminate all specific presuppositions of existence, potential existence, subsistence, *etc.*, and value still remains. On the other hand, applying the same method to the proposition that every ontological judgment presupposes a judgment or acknowledgement of value, the same result does not follow. Most of the value implications can be eliminated, but not all. The "transcendental minimum" in such judgments is itself a value.

[35] "Value and Existence," this JOURNAL, Vol. XIII., p. 455.

[36] In this I am, I think, in essential agreement with the position of Emil Lask, *Die Lehre vom Urteil.*

I consider this conclusion most important, although I maintain it with considerable reluctance. It is true I presented a somewhat similar conception of the priority of value in the last chapter of my book on *Valuation,* but I was not then fully aware of all its implications and difficulties, some of which have just been taken into account. The difficulties that still remain in the conception are clear enough to myself and must also be evident to every competent reader, but I am fairly confident that in some form it is the only one that can make our thought coherent. In a word, the reason why we can not think value without its implying the reality of its object, despite the fact that the object is unreal in any limited sense of the definitions, is because reality is itself, in the sense meant, a value concept. The reason we persist in saying that value is real when clear thinking demands that we shall call it neither an existent nor subsistent, is that in so doing we are merely asserting the character of value as an ultimate objective. In the remaining paragraphs I shall indicate some of the reasons for this view. First of all let us again examine our so-called ontological antinomies of value.

The vulgar prejudice in favor of actuality is a constant source of embarrassment of the value consciousness in ethics and esthetics, and is especially potent in religion. It is constantly exploited by the philosophers. It has been said, "It is vain to ground religious faith on the validity of values. They must also exist" (Perry). Says Baldwin, the actuality of religious objects can never be proved, and against the turning of them into values the unfulfilled categories of reason will always protest."[37] All of which is true enough if we persist in our prejudice in favor of actuality. But what is there ultimately to prevent the human mind from freeing itself from its prejudices? As I have pointed out at length, where the presupposition of reality *means* existence or logical necessity, there the acknowledgment of that presupposition is the necessary condition of the value. But there are many values that do not have the presupposition of reality in either of these definable senses, as I have shown in my earlier studies and more specifically in the present discussion of "impossible" objects. Here the reality of value does not imply the existence or logical possibility of its objects. This Kant, indeed, saw long ago in his doctrine of "practical realities." But his view should not be confused either with pragmatism or with that other form of the statement which, beginning with F. A. Lange and his "standpoint of the ideal," has produced such modern conceptions as that of Santayana. In asserting a world of imagination which is at the same time valuable and unreal, they may, indeed, escape the in-

[37] J. M. Baldwin, *Genetic Theory of Reality,* p. 155.

coherence of pragmatism, but only to fall into that intolerable inanity of bidding us interest ourselves in the unreal.

In the second place, there is the conception of "degrees of reality" to which reference has already been made. It is clear enough that, as Mr. Bernard Muscio says,[38] the concept is meaningless unless reality is "eminently a value concept." Stripped of this eulogistic connotation, none of the ontological predicates (existence, subsistence, *etc.*) has degree. On the other hand, there is scarcely any question that *within* and *between* these spheres of being, degrees of reality can be applied with a wholly significant meaning.[39] But Mr. Muscio is wholly in error, as I have tried to point out elsewhere, in thinking that the idea rests upon "the postulate that the universe will satisfy us." Actually it rests upon something quite different. It lies in the value notion as such, *a priori*, that every object as such has either actually or potentially a place in the scale of value, and this notion of degree inevitably transfers itself to reality which the value notion implies. But this implication has nothing to do either with desire or belief, but with insight. It does not rest upon the "romantic" or "sentimental" belief that "things need to be good or beautiful or spiritual to exist at all," but upon the cool recognition that, by the very structure of our being, we are bound to find interest and to value objects that are not, and for all we can see can not be, real in any narrow or retrospective definitions of this term. But to deny reality to these "values" means the intolerable inanity of finding interest in the unreal.

More important than either of these conclusions, however, are certain further implications regarding fundamental problems of philosophy. With justice the modern idealist has been accused of equivocation in the use of the terms reality and degrees of reality. For if he defines reality as "an inseparable aspect of sentient experience," it is certainly true that nothing can be more real than anything else.

[38] "Degrees of Reality," *Philosophical Review*, November, 1913.

[39] It is, for instance, not absurd to speak of degrees of reality within the world of existents. Take the distinction between an hallucination and a normal sense perception. There is sense in saying that the latter is more real than the former, although both are undoubtedly existent and in existence there are no degrees. Nor is it otherwise in regions outside existence. Both the geometrical circle and the "round square" are *objects*, although neither exists. The circle has subsistence and perhaps the round square may be said to have that peculiar third form of objectivity which Meinong has characterized as *ausser-Sein*. But though the first merely subsists and the second has not even this form of being, it is still possible to say without absurdity that the circle is more real than the round square. But what do these facts mean? They mean simply that, if one can not deny sense to this way of speaking—and I can not see how one can—one must admit not only the necessity of the distinction between "reality" and being in any of its definable forms, but also the inseparability of the notion of reality and value.

For him there can be degrees of reality no more than for the realist who defines reality in terms of "independence of sentient existence." So long as the idealist identifies existence with reality, the criticism is perfectly sound. Existence permits of no degrees whether defined idealistically or realistically. So far the realist is undoubtedly in the right. But if he avoids this equivocation, it is only to court futility. To define reality as "independence of the subject" is just to degrade it to that generality, where it becomes meaningless. Of course all real objects are independent of the subject, but just as they are all inseparable from experience. To give any meaning to his ontological predicates, he will have to distinguish differences within this world of objects. But with the appearance of these distinctions, must not value distinctions appear also? As you can not have two or more objects without its following *a priori*, that one is of more value than the other, so you can not have two or more types of objectivity without its following that one is more important, and therefore more *real*, than the other. Degrees of reality will creep in "willy nilly." The truth of the matter is that the very debates of the realist and idealist prove that our conception of reality is sound. When the philosopher takes as his criterion of reality "independence," or "coherence," he is really taking certain values as his defining terms, aspects of experience which are important from different points of view. Royce has shown this for "independence" in a very suggestive and convincing way. The battles of the philosophers have been really but the playing of certain values over against each other, identifying reality now with this, now with the other meaning of existence, to which the broader interpretation of existence has given rise. This not only explains the persistence, the struggle for existence, of certain cardinal tendencies in philosophy, but suggests also that the solution of the problem must lie along the line of a value philosophy which shall weigh the relative importance of these different motives in experience.

The concept of reality here developed transcends, therefore, the idealistic-realistic contrast as ordinarily presented, as I believe a true philosophy, based upon a true conception of value, is beyond realism and idealism. But this is another story.

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SOCIETIES

NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on Monday evening, February 26, at Columbia University. The following papers were read:

The Effect of Method of Presentation on Immediate Memory for French Vocabulary.—Miss C. E. Farnam.

The experiments were made upon 208 students and were intended to show the best method for teaching French vocabulary. Various methods were tried, among them pronunciation of the French word accompanied by sight of the object named, by a colored picture of the object, by a gesture, and by the English equivalents. The object method was found superior to the color method.

(This paper will later be published in full in the *Journal of Educational Psychology.*)

Psychological Analogy in Political Theory.—Professor J. P. Turner.

It is true not merely that the facts of psychology are useful to the statesman, but that the state must be thought of after the analogy of the individual organism. It is, of course, a commonplace to-day that psychology fills an important place in social theory, but few political theorists seem to realize to what an extent this has always been true. Interest in psychology is too often treated and thought of as something highly modern. Our present political practise implies for most persons no psychological basis. The legally trained writers who can hardly be unacquainted with the principles of modern psychology, consciously or unconsciously, theorize in politics as though they knew no psychology save that of the Platonic tradition. This is one of the causes of our difficulty; we are following still an outworn doctrine. To understand our troubles, we must turn back and examine the psychology upon which it rests; to correct them, it may be wise to look into the merits of the new psychology.

The Correlation of Interest and Ability.—Mr. J. D. Jackson.

The purpose of the experiment was to find the correlation between interest and ability in different functions tested at the same time, *i. e.*, at a single sitting. Seven tasks were given the subjects, and the subjects (42 in number) then made four rankings or orderings of the

tasks, namely, according to interest, to novelty, to difficulty, and to judgment of ability. The relative ability of a subject in the tests was determined by finding his relative rank in the tests in absolute time as compared with the other 41 subjects.

Five rankings of the tests were thus secured for each subject, four being subjective and one, that as to ability, being objective. Then ten correlations possible with the five rankings were computed by the Spearman formula. The average of the 42 correlations of interest and ability is plus .18 (P. E. .26); of interest and judgment of ability, plus .58 (P. E. .34).

The Influence of Mental Set on Controlled Association.—Mr. Mark A. May.

The research on which this report depends was carried on in the Columbia laboratory during the academic year 1915–16. The object was to study the phenomenon of mental set. From the many psychological processes which involve set, controlled association was chosen as offering a particularly fruitful field for research. The answers to three questions were sought, only the last of which will be dealt with in this report: (1) What is the nature of preparatory set? (2) What kind of influence does it exert on controlled association? (3) How much influence does it exert?

The method of procedure was to create experimental conditions under which the amount of set would be reduced to its minimum and to measure the association time; then, with conditions as constant as possible, to increase the strength of the set to its maximum and measure the association time. It was thought that the difference in the association times of these two experiments would be a measure of the amount of influence of the set on the association. The results show that when the set was at its maximum, the median association time was 1.05 seconds; when the set was at its minimum, the median association time was 1.35 seconds.

Another result was that of a rough measure of the relation between the time it takes to get set and the time it takes to react. A number of experiments were made with a view to determine this ratio. It was found to be about 100 to 110. That is, for every increase of .10 second in the "set time," there was a decrease of .11 second in association time.

Experiments with the White Rat and the Hampton Court Maze.—Georgie J. Ruger and Professor Henry A. Ruger.

One group of rats was carried in a closed car fifteen times over the correct path of the Hampton Court maze and fed at the end of each trial in the home box at the center of the maze. Another group, the control group, was not so carried. Comparison of times of

learning of the two groups showed no difference in rate of learning, and so afforded no evidence of learning of the route by semicircular canal factors.

As a control on this negative result, additional groups of rats were tested as to the extent to which established habits are disturbed by variation in conditions. Blind alleys were blocked off so that the animals learned the correct path only. Then the blind alleys were opened. The last half of the maze was learned and then the whole maze. The maze was rotated and disguised by proper linings. Although these variations in conditions in general disturbed the habits previously formed, the disturbances were not serious.

This result makes it seem likely that the negative result as to the semicircular canals was not due merely to the swamping of a habit already set up by a variation of conditions. Further experimentation is needed, however, to settle the point in question.

A. T. POFFENBERGER, JR.,
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REVIEWS AND ABSTRACTS OF LITERATURE

A Point Scale for Measuring Mental Ability. ROBERT M. YERKES, JAMES W. BRIDGES, and ROSE S. HARDWICK. Baltimore: Warwick and York, Inc. 1915. Pp. 218.

Professor Yerkes and his collaborators are engaged in a very important enterprise, the object of which is to prepare a more scientific instrument than we now have at hand for measuring general mental ability. The present volume contains an elaboration of two previous reports on the subject,[1] together with much new material, a complete revision of the original arrangement of the tests, and some very definite proposals for the further improvement of the Point Scale. Since the publication of this volume, still another report has been published,[2] giving later and more reliable "norms" and a more detailed discussion of the "coefficient of intelligence," which is described but briefly in the volume under consideration.

[1] Robert M. Yerkes, and J. W. Bridges, "The Point Scale: A New Method for Measuring Mental Ability," *Boston Medical and Surgical Journal*, 1914, Vol. 171, pp. 857–865. Robert M. Yerkes and Helen M. Anderson, "The Importance of Social Status as Indicated by the Results of the Point Scale Method of Measuring Mental Capacity," *Journal of Educational Psychology*, 1915, Vol. VI., pp. 137–150.

[2] Robert M. Yerkes and Louise Wood, "Methods of Expressing Results of Measurements of Intelligence: Coefficient of Intelligence," *Journal of Educational Psychology*, 1916, Vol. VII., pp. 593–606.

The Point Scale is composed chiefly of tests which have "been tried out" for some years in the Binet-Simon series. The number of questions to be asked has been decreased, the form in which questions are to be asked and tasks are to be assigned has been modified in some respects, and the method of scoring the results has been radically changed in transplanting the Binet tests into the Point Scale.

The builders of the Point Scale have consciously given preference to those tests which are applicable through a considerable period of years, while Binet-test enthusiasts have usually looked with special favor on tests which make a sharp distinction between children of a given age and those younger. This difference is particularly emphasized in the two methods of scoring results. For the Binet tests a child's response to a given situation is credited either as a "success" or as a "failure," while the Point Scale recognizes degrees of success. For example, the child who is asked to make a sentence containing the words *New York, money,* and *river* is given no credit in the Binet test if he says: "I live near a river. There is money in New York." According to the Point Scale method, this response would receive 2 points, or half as much credit as would have been received if the three words had been used correctly in one sentence.

The result of a Binet test is a statement of the approximate mental age of the child, while the result of a Point-Scale test is a statement of the number of points credit allowed in the child's examination. The maximum total number of points allowable for making the correct response to each element of the twenty tests in the Point Scale is 100. By means of a table of "norms" it is easily possible, however, to transform such a Point-Scale score into terms of the average chronological age of normal American children who achieve the same number of points credit.

The authors of this report are to be commended for publishing in detail the exact score of each child on each test. We are tempted to say that the chief contribution made to the science of mental testing in this volume is to be found in the importance attached to the actual accomplishments of American children in the individual tests. Professor Yerkes and his assistants have not been satisfied to accept for American children the reported results of Binet and Simon in measuring the mental abilities of French children. Moreover, the authors of this volume have not been content to publish merely the total number of points achieved by each child in the test series as a whole. The achievement of each child in each test has been given in detail, with clear explanations of the bases used in allowing the various amounts of credit for each test. If such care had been taken by all those who have used these tests during the past few years, it would now be possible to interpret the results of applying them with much greater accuracy and confidence than is possible at present.

In his proposals for a Universal Point Scale for Mental Ability, Professor Yerkes proposes to give an equal number of tests for receptivity, imagination, affectivity, and thought. The difficulty here is the same that we find with all efforts to measure "general mental ability." Mental ability is so complex that none of us can be sure he has made a proper qualitative analysis of it, and certainly any attempt to weight definitely the various elements of mental ability can as yet be little more than a random guess. Even though we accept temporarily some ingenious weighting of the various functions such as that given in the Point Scale or in the Binet tests, the most practical points in connection with the results of our tests are not the "mental ages" or "Point-Scale scores," but the details showing just which types of tests were difficult for each individual tested. Even though two twelve-year-old boys are each of "mental age nine years" and each has a Point-Scale score of 50 points, it is nevertheless not improbable that the two are quite different in mental endowment and that the type of training needed by the one may be practically very different from that needed by the other. For purposes of practical vocational and educational guidance, a number of distinct and specific mental scales are needed instead of one scale for general ability.

It would be possible for us to contrive, no doubt, a scale for general physical health, and yet practically we are much more interested in the relations between the results of particular physical tests, such as weight, height, chest expansion, temperature of the blood, and the like. Similarly, the specific mental characteristics of an individual are the only satisfactory foundation for a practical mental diagnosis that is to be used as a basis for successful treatment. Although there may be a high correlation between intellectual qualities, we nevertheless find many special cases where measurements of general mental ability cover up the special defect or the special spark of genius that should determine the training to be provided.

A second vital difficulty in the Point Scale lies in the fact that the various tests have not been scaled at all. The tests are merely arranged in the order of difficulty resulting from the particular systems of partial credits determined upon by the authors. On the whole, the estimates used in giving the partial credits may have been so good as to disturb very little the general results, but it would seem unfortunate that a "coefficient of intelligence" should be based upon credits which were any less secure than the most careful investigation could make them. Let us hope that we may some day have a carefully graded series of tests in each of the special types of mental activity, each series so accurately evaluated that we may know just how much more difficult each element is than the previous element.

In spite of all the defects which appear in the Point Scale, it has

many advantages over the mere translations of the Binet tests which have been used so extensively. The authors themselves point out constantly that their instrument is merely in the process of being developed and that there are many points in which it will be improved. The hopeful sign is the activity of the authors in carrying forward this improvement constantly on the basis of experimental results. No one can afford to omit this volume from his list if he wishes to read the important literature dealing with the measurement of intelligence.

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Outlines of Jainism. JAGMANDERLAL JAINI. Edited (with a preliminary note) by F. W. THOMAS. Cambridge: University Press. 1916. Pp. xl + 156.

The canonical books of Jainism have been later in coming to western attention than those of orthodox Brahmanism or of Buddhism. Judge Jagmanderlal's handbook is issued especially to pave the way for a series of translations which the Jain Literature Society has in view. It is less a sketch of the religion for light reading than a schematic framework with brief definitions of the many technical terms used in this philosophical system. After an introduction he devotes a few pages to Jain theology, so-called, and a much larger space to metaphysics, followed by ethics, a little on ritual, then quotations from texts, with appendices on logic, cosmogony, a list of the sacred writings, and some other subjects.

Jainism, or the sect of the Nirgranthas (Unfettered) is a legitimate child in the Hindu religious family, even if not so acknowledged by the orthodox, and its points of resemblance to the others are more apparent than its differences. Especially close is it to Buddhism in history, in practise, and in habits of thought. Mahāvīra, its great reformer, if not founder, was a contemporary of Gautama (*circa* 500 B.C.) and had been born at Vaisālī, a city which the latter much frequented. Yet it strikes the mind as cruder than Buddhism, more extravagant and lacking in the same warmth of human appeal. It contrasts in holding a dualistic philosophy, or perhaps pluralistic would be a better word, for the soul is classified as one of six substances. The others are matter, time, space, *dharma,* and *adharma. Dharma,* a term of many meanings, is in the present sense a peculiar notion of Jainism and denotes the medium that passively conditions motion, as water does for a fish. Contrariwise, *adharma* is the principle of rest, as the earth to falling bodies.

Jaina logic contains certain elements that may win approval from liberal thinkers. Its distinctive doctrine is one which broadly sug-

gests Montaigne and consists in recognition that a thing may have varied aspects or points of view. The Jaina syllogism agrees with that of the Nyāya philosophy in comprising five propositions, the first two being used to build up the major premise inductively.

Turning to more religious topics, full personal responsibility is assumed for destiny, although innumerable gods are acknowledged and reverence is paid to legendary saints of old, such as the twenty-four Tīrthankaras, or Guides, of whom the historic Mahāvīra was the last, and his immediate predecessor is not too remote for credence. God in the singular is held to be merely the ideal, the highest expression of our latent powers. He is not a creator, since creation presupposes desire to better an imperfect condition, and God can not be imperfect. Images play an important part in the ritual, though so modern-minded a man as our author naturally tries to explain away their idolatrous significance.

The best part of Jainism is its ethical system, which is far-reaching, particularly through its underlying principle of *ahimsā* (harmlessness). In its kindness to animals it surpasses probably even the other Indian sects and may be pardoned for going to some extremes, as in fancifully assuming the immortal nature of the brute world, in unpractical regard for the lives of minute organisms or in carrying ethical speculations to the plant and mineral realms. The author points out how the highest good of society and that of the individual are identical. He concedes that Jainism argumentatively rests altruism upon self-interest, but we are not, perhaps, to infer that it takes no deeper view. In conduct, the scrupulosity of the monks and devout laymen is severe, but there is a practical morality which overrides it for the herd. Thus (p. 68) a layman who is religiously progressing should abstain from numerous activities, including trade and the army. But (p. 73) it is estimated that half the mercantile wealth of India passes through Jaina hands, and (p. 72), legal and military slaughter are justified on the ground of social duty. The explanation may be that those engaging in these pursuits are on the lowest rung of the ladder, not having assumed the burden of perfecting rules.

Like other sectarians of his race, the Jaina seeks spiritual emancipation and bliss through an ascetic life; his philosophy is at bottom eudemonistic. His pessimism is shown by his mythical chronology: Our era contains six ages, ranging from those of great happiness to great misery and we are living in the worst of all. During the joyful times men dwelt as unlearned children of nature, getting all that they wanted from the wishing-trees. However, this part of the cycle will come around again and again.

The usefulness of Judge Jagmanderlal's little book to those who wish to study Jainism is enhanced by two folding plates which present

some of its technicalities in tabular form. The volume may readily be pronounced a well-executed one and likely to prove helpful within the circle of its appropriate readers.

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JOURNALS AND NEW BOOKS

JOURNAL OF ABNORMAL PSYCHOLOGY, December, 1916–January, 1917. *A World Consciousness and Future Peace* (pp. 287–304): MORTON PRINCE. – Individual consciousness and collective consciousness are discussed. Theoretically the attainment of a world consciousness is psychologically possible, and if ever attained it would necessarily have the same binding force in regulating international conduct as has social consciousness within a nation to-day. *Is Dementia Præcox Properly Described as an Infantile Mode of Reaction?* (pp. 305–308): H. DOUGLAS SINGER. – The extremely careful use of terms and selections of words, especially adjectives, is urged. The advisability of using *infantile* for dementia præcox is discussed—to the writer the adjective conveys the impression of immaturity with normality for the stage of development reached. *A Case of Psychasthenia—Analysis and Cure* (pp. 309–324): MAYER SOLOMON. – The writer describes a case of psychasthenia in detail. *An Unusual Case of Speech Inhibition* (pp. 325–327): SMILEY BLANTON. – A case is described which shows that parents and teachers should not neglect to take notice of cases of excessive timidity in children that prevents them from speaking when in school or with strangers. *Variations in the Sensory Threshold for Faradic Stimulation in Psychopathic Subjects. V. The Group of Psychoneuroses* (pp. 328–334): G. P. GRABFIELD. – "The psychoneurotic group of cases shows, with certain exceptions, a normal esthesia to faradism; possibly certain cases are even hyperesthetic to this form of stimulation. The exceptions to the finding of normal sensitivity are found in the cases of traumatic neurosis and in certain cases of occupation neurosis; a certain number of the latter, however, show a normal or hypesthesia to faradism. This finding of normal sensitivity in these cases is of diagnostic value in differentiating this group from certain of the frank psychoses which show an hypesthesia to this form of stimulation." *Contributor's Notes. Reviews:* W. TROTTER, Instincts of the Herd in Peace and War, and MARTIN CONWAY, The Crowd in Peace and War: PUTNAM. Stephen Smith, *Who Is Insane?* LANE. H. H. Goddard, *The Criminal Imbecile:* LANE. Joseph Jastrow, *Character and Temperament:* GEORGE V. N. DEARBORN. C. J. Herrick, *An Introduction to Neurology:* GEORGE V. N. DEARBORN. *Books Received.*

Barrow, George A. The Validity of the Religious Experience. Boston: Sherman, French, and Company. 1917. Pp. xi + 247. $1.50.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held in London on March 5, Dr. H. Wildon Carr, president, in the chair. A paper was read by Professor C. Lloyd Morgan on "Fact and Truth." Starting with facts of appearance, as a convenient point of departure, the writer contended that such a fact is always relational in structure and that it is this relational structure which is of the very essence of fact. All facts of appearance are facts for knowledge. But we need to distinguish between facts *for* knowledge and facts *of* knowledge. We may winnow out from the multiplicity of fact *for* knowledge certain facts *of* knowledge which have a privileged status, and we may speak of a fact of knowledge as accordant with a privileged fact of appearance without denying that accordance may merge in identity. We may then further distinguish between "the sphere of knowledge" and "the sphere of the knowable,"—a fact of knowledge as an item of content on the sphere of knowledge may be said to be correspondent to a knowable fact, when the radii of the two spheres in contact are in the same right line. And here again correspondence may merge in identity,—the difference between knowable fact and fact of knowledge being a difference in context. The relation between any knowable fact on a non-contact radius of the sphere of the knowable, and any imagined fact on a non-contact radius of the sphere of knowledge, is given in practical determination by the nature and amount of rolling of the spheres requisite to establish right-line contact. And right-line contact is that of direct acquaintance when the knowable and that which is then and there factually known are one. Fact is always particular, always a "this" or "that" dateable and placeable. But owing to the enormous amount of repetition in the fact—structure of the knowable world, truths as well as facts of knowledge enter into the structure of the sphere of knowledge. Within *that* sphere truth emerges with the repetition of experience of facts in the knowable world and forms a structural link between the facts thus experienced. There is (*a*) truth in the structure of the knowable world and here there is no shadow of error, (*b*) truth in the structure of the sphere of knowledge, and perhaps its leading characteristic is consistency, (*c*) truth as correspondence of the structure in the sphere of knowledge to the structure of the knowable sphere.

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ON SENSIBILITY[1]

"Mind" Required to Express Difference of Life

ONE who has tried to define life, with all its purposefulness and freedom, as a thing residing in and moving through mechanism without ceasing to be part of it, can not be unacquainted with trouble. Yet, this task accomplished as best it might be, he would be innocent indeed who did not know that if he would go on to define mind in the same empirical way the worst of his perplexities lay before him. For to define a thing in an empirical or pragmatical way is so to define it as to leave no doubt what experiments would inform us whether anything corresponding to our definition existed or no. But where minds are concerned we have not yet or only recently grown scrupulous to avoid making hypotheses about them that suggest nothing in the way of an experiment by which our guesses might be tested. We have pretended to know too much of our own, been content to know too little or nothing at all of our fellow's mind, and empirical health is not in us. So that one to whom his own mind is no immediate certainty and his neighbor's no unapproachable eject has trouble in explaining how and why both of them are objects to be experimented upon like trees or houses—and yet very unlike, too, in the kind of experiment they call for.

As these matters are not old and well-worn, but (if I may judge from the criticism previous papers of my own and of other sympathetic writers have called forth) new and even repugnant to prevailing habits of thought, there may be some advantage in beginning the discussion of them where otherwise one might rather have hoped to leave off. A tentative generalization at the outset has often helped me, a reader, and I see no reason why the like should not be vouchsafed by me, a writer, if only it will not be taken with too much finality. But if I start with some very loose reflections on the nature of mind, it will only be to abandon them as quickly as may be and

[1] Paper written for the Philosophical Club of Columbia University. It presupposes the arguments of two earlier ones: "Mind as an Observable Object," this JOURNAL, Vol. VIII., p. 322, and "The Pulse of Life," this JOURNAL, Vol. XI., p. 645.

to devote the body of my paper to one of the most special and technical problems with which an empirical method can be confronted.

It will be remembered that the empirical method of defining mind begins by identifying what you would do to find out whether a being had a mind or not with what you mean by mind, or, as I have sometimes put it, "the criterion of mind constitutes its definition." Now those who have approached the problem of the criterion of mentality fall into two classes: some think they find mind wherever they find life and others attribute mind to only those forms of life they call the higher. Those who hold the first opinion seem to mean not only that life and mind have the same denotation, but also that there is no difference in the connotation of the two terms. If so, the fathers who invented our categories for us were for once lavish in giving us two names for the same thing, whereas it was their niggardly custom to make out with one word for ten thousand things. On the other hand, those who attribute mind to the higher forms of life and not the lower escape the danger of voiding the distinction between life and mind only to fall into another more serious. For I know of none of them whose test of the presence of mind remains clear without becoming structural. But if there is anything in the poet's saying that tired limbs were invented before feather beds and that thirst is older than wroughten cups, it may be our fathers knew a great deal about minds before they knew anything of delicate anatomy.

There is a way, however, of doing justice to both of these historic motives; the denotation of mind may be the same as that of life, and yet the connotation remain quite different. For if life were all of a level, if all things pursued the same end with no difference of skill, I can not see how we should ever have come by the concept of mind or in what way it would have served us if we had. But in our world there are purposeful beings that differ in their aims and there are beings pursuing the same end that differ in the skill with which they work for it. Take just the latter of these classes (for I must postpone the discussion of the former to another occasion); there is no mistaking the need the biologists have felt to account for the different resourcefulness of beings struggling for the common end of self-preservation by introducing the category of mind. Is it not because this being has a mind the other lacks that it can adapt itself and live where the other fails and dies?

It is the observation of a certain difference of lives that has stung the primitive biologist into inventing mind. But, alas, if we ask his modern representative for a definition of this new aspect of life he either falls into mysticism or returns an answer that amounts to saying: Mind is that to have which is to have what accounts for a greater resourcefulness of behavior. Having arrived so far, he feels

that any further pursuit of a problem so lacking in empirical suggestiveness is beneath his dignity as a scientist and he is ready to turn the whole matter over to a certain entity he calls the "metaphysician."

But what if, having learned a lesson from history, we were to reverse all this; what if instead of saying, "this being is more resourceful than that because it has a mind the other lacks," we were to say, "this being has a mind the other lacks because it is more resourceful." Then all we should mean by the various faculties and graded refinements of mind would be the empirical description and measure of these differences in the conduct of life. To be sure, this would mean that if there were no comparison of minds there would be no mind at all, that we should have no reason for attributing mind to anything if we did not give it more or less than some other. But though it would be absurd to say the like of one's keys or purse or medulla, there are many concepts beside that of mind that owe their meaning to relations. Thus many of us after reading Berkeley are content to say that nothing would have any reality at all had it not more or less than some other, and would feel that we had by honest effort struggled out of the metaphysical mood that would express reality in terms of a Lockian substance whose only definition was to be that which makes things real.

To come, then, to a definition (or rather partial definition) of mind. If one being can accomplish a given purpose in $(n+1)$ types of situation, another in but n of these, we shall call that in which the first is better equipped than the second a faculty of mind. I call this definition partial because (1) it makes comparison of means only, not of ends, and (2) it presupposes two minds, the observing and the observed whose relationship is not explained.[2] But I foresee nothing in the later discussion of these matters that will contradict what has so far been said, although if I knew how to say everything at once I should probably want to put each thing a little differently. Lacking this gift, I do not see how any scientific discussion can avoid a certain "dialectic" that asserts only to take back in part.

Intensity of Sensation Defined

If I turn back to very ancient history to illustrate the idea set forth, I fall first upon Aristotle's distinction between animals and vegetables. With Aristotle organisms were generically alike in purpose and specifically different in resource. The first gain of resourcefulness he noted he set down to the faculties of sensibility and spontaneous motion that raised the animal above the vegetable species in

[2] *Cf.* however, this Journal, Vol. X., pp. 141 ff.

the scale of life. Our modern love of continuity does not encourage us to look upon the acquisition of faculties as so sudden an affair, but we do still regard differences in the delicacy and variety of sensibility as important to the accomplishment of purpose and as evidence of mental superiority. So, too, spontaneity, originality, inventiveness are made measures of intelligence and are taken to be faculties that make for success. This pair, sensibility and spontaneity, might profitably be driven abreast, for I doubt if we find either of them very far apart from the other; but as I must limit myself to one (not to lengthen the discussion) I choose sensibility. Nor do I conceive that I am proposing any different problem if I offer to discuss what it means to have a sensation of a certain quality and a certain intensity.

When the sun rose on Austerlitz, it warmed a puddle and set up chemical reactions in its shallow depths; infusoria stirred; an emperor made a gesture. Inanimate matter "reacted" physically and chemically; animalcules after the manner of their various tropisms; the emperor in the fashion of a Napoleon. Why do we say that of these various reactions, that of the inanimate stuff shows something less than sensibility, that of the Emperor waving on his armies very much more, while just the simplest life there was there shows pure sensibility, nothing more and nothing less?

The answers may well lead up to a definition of sensibility. And I should say: (1) We do not call the physical and chemical reactions sensitive because they are not teleological. (2) We do not call the Emperor's gesture mere sensibility because, though full of purpose, its stimulus was not the sun's light or heat, but the sun and a fair share of the universe. (3) But we do call the behavior of the simple organism a display of sensibility because, viewed as a reaction, it was teleological, and considered as to its stimulus, this stimulus was confined to mechanical changes at and within the surface of its body. The proof of which is that if we imagined all the rest of the cosmos changed, but in such wise as to leave the mechanical situation at the organism's surface unchanged, we should expect the organism to behave in the same way. It has a sensation, not a perception.

Whence this definition of sensibility: Any body that reacts with a purpose we call its own to a change of mechanical conditions within its contours displays sensibility, or has a sensation.

It follows from this that all living beings are sensitive or have sensations, but it follows equally from what went before that we should have no reason for saying so did not different living beings display such differences of sensibility as lead us to recognize sensations of varying quality and of distinguishable intensity. Wherefore it is to the definition of quality and intensity of sensation that our argument would carry us on.

The older empiricism of a Locke or of a Condillac did everything it could to foster the idea that experience began with sensations. And so it does, very possibly; but it takes a most experienced person to tell what is meant by the "simple idea" with which experience begins. What is the quality, what is the intensity of this first sensation? The learning of the ages is little enough of an equipment for the telling. It is only one who knows a great deal about the world "made out of" sensations that knows anything about the "sensations" this world is made out of. Wherefore one can not avoid, nor should any one want to avoid, bringing as much as he can of his knowledge of mathematics and physics to bear on the task of telling what it is that a human baby or maybe a well-grown ameba has when it is said to have a sensation of this or that quality and of greater or less intensity.

To begin with intensity: only one who has developed the concept of intensity in the physical order can tell what it means in the psychical. Now to explain why, if I increase the amplitude of a light wave, I add to its intensity, while, if I alter its wave-length, I change its quality, is a matter that calls for some consideration. The old opposition between quality and quantity can not have any application to a state of affairs in which every term is quantitative. Why does the amplitude series constitute a scale of intensities, differences of wave-length a spectrum of qualities?

If I am not mistaken, the best English into which we can render the Latin *quale* is not *what*, but what *not!* It would seem that we endeavor to throw what differences we can into various scales of intensity and what we can not we leave qualitative, *i. e.*, *not* intensive. Now a scale of intensities has this that is peculiar to it; its different members are distinguished in terms of energy. But where energy differences are not apparent in a physical series, we allow it to remain a scale of qualities. In this way we can understand how it is that two light waves of different amplitude, but constant wave-length, should be regarded as of different intensity, while two light waves of different period, but the same amplitude, should be called qualitatively different.

Having thus defined intensity of stimulus, we are free to inquire what it is in an organism's reaction to stimuli of varying intensity, or to stimuli of the same intensity under varying conditions of sensibility, that leads us to attribute to this organism sensations of different intensity.

The classic model of such an inquiry is Fechner's, the outcome of which was to define the intensity of sensation produced in a given organism by a stimulus of a given intensity in terms of the following empirical data: (1) The intensity of the physical stimulus measured

in a certain physical scale; (2) the intensity of the stimulus just noticeably greater than this; (3) the intensity of the stimulus just noticeable by the organism under the same conditions of sensibility. This definition of Fechner's meets, I conceive, all the formal demands that the traditional meaning of the term "intensity of sensation" imposes, and we need have undertaken no further labors in this field were it not for one unfortunate thing. And that is that the third of our empirical data can not in general be obtained. It could only be obtained for all possible cases if Weber's law could be established for all ratios of the j. n. g. stimulus to the standard, from the lower threshold stimulus to the upper. This is apparently more than can be done by experimental means so far devised, whereupon one may sum up by saying, Fechner has defined something that if it existed would be a sensation of measurable intensity; but no such thing exists.

Thus the empirical method requires us to undertake anew a reduction of vague traditional ideas respecting intensity of sensation to an exact definition that will satisfy them as well as Fechner's did, and at the same time, by avoiding all reference to Weber's law, permit us to find in experience objects corresponding to the thing we have defined. This I have tried to do with results that I should like to submit to your judgment; I found the task difficult indeed, but so fascinating that it is only by the exercise of a self-restraint I hope will be counted unto me for righteousness that I abstain from plunging into a full discussion of the way this defining formula was arrived at. However, I have never found that philosophers in general shared my fondness for getting my thoughts as quickly as possible into mathematical form and keeping them there as long as they would let me. Therefore, I have contented myself with submitting along with this paper the discussion referred to in case any would do me the favor to look at it: it will be enough for the present purpose if I set down the formula quite baldly, only lingering lovingly on some of its more obvious charms and virtues.

$$I_r = \frac{1}{\log \dfrac{r_+ - r_0}{r - r_0}} \log \frac{r - r_0}{r_\omega - r_0}.$$

That is, the intensity of the sensation due to a stimulus r is a function of exactly the same form as Fechner's and would be identical with his, if r_0 were the zero of the physical scale with respect to which Weber's law was supposed to hold and r_ω were the "threshold stimulus." I have tried to show that any definition of intensity of sensation must have this form; but that we may find a new interpretation for r_ω and r_0 that (1) makes no reference to Weber's law, (2) is indefinitely more liable to be found applicable to experience, and

(3) enables us to determine the value of I_r by observing the reactions of the organism to variations of the stimulus through an indefinitely small range of values.

The data that must be collected experimentally in order that the intensity of a given sensation may be calculated can be illustrated in a particularly simple case. Jennings has described the behavior of the paramecium under the influence of temperature stimuli. Placed in a trough of water kept at a temperature within a certain range, the paramecia will be found evenly distributed throughout the trough. But if one end of the trough be heated and the other cooled beyond the limits of this range, the paramecia will be found gradually to collect in the region of optimum temperature. This phenomenon comes as near as can be to an exhibition of pure sensibility; in the change of temperature of the medium we have a stimulus describable in terms of mechanism; in the motion of the organism, a reaction obviously teleological, and finally, in explaining this reaction we need take into account nothing in the way of stimulus but what happens at the surface of the organism itself.

It is possible then to ask, what is the intensity of the sensation produced in a paramecium by a temperature lying within a certain range? And to this question it is incumbent on us to find an experimental answer. But this is exactly what our definition of intensity enables us to do very simply. For, suppose the organisms evenly distributed at a given temperature; suppose, then, the temperature increased at one end of the trough until the tendency is noticed for motion to take on a common direction, when we may say the organism has "just noticed" the change in its environment. The other data required for our calculation would be gathered by again decreasing the temperature until the original distribution is recovered at a temperature which, if our formula is applicable, will not be identical with that from which we set out, but which we may define as producing a sensation of the *same intensity* under conditions of "over-estimation." Again increasing the temperature under these new conditions until the change is "just noticed," we have one group of data, and repeating the whole experiment for a range of temperatures as narrow as we please we have all the data required for our calculation. Our definition still stands a chance of proving inapplicable, though faint indeed as compared with Fechner's. Should it prove inapplicable we should have to find new interpretations for some of the r's of our formula; but if my analysis is correct, we should be confined to a definition of the same form.

"Virtual" Behavior

I have chosen this very simple example of what an empiricist would mean by attributing a sensation of a certain intensity to a given living being because the behavior on which his attribution rests is here so obvious. But the case is not so simple as to be free from all suggestion of difficulty. Indeed it can be made to yield one question that seems to me of great importance in defining the sort of behavior on which an empiricist bases his judgment that he is dealing with a phenomenon of mind.

"For suppose," a critic may well ask, "suppose you had not carried out the series of experiments on which you based your calculation of the paramecium's sensation, suppose you had not varied the temperature of the medium—then there would have been no behavior on the part of the paramecium for you to observe. Would the organism have been without a sensation of a certain intensity just because you had taken no measures to ascertain what it was? On the other hand if you say it had the sensation when it did not exhibit the behavior, how can you identify sensation with behavior?"

Here, if I am not mistaken, we come upon the reason for regarding sensibility as "passive," having a sensation as a receiving rather than a doing of aught in the world. For the behavior, I would answer, that measures the intensity of our organism's sensation is not necessarily *its* behavior at all, but the behavior of certain classes of beings to which it belongs.

I have already suggested that all studies of teleologically defined beings are statistical.[3] It will surprise no one then if I maintain that the order of facts on which depends my calculus of a paramecium's mental condition is quite analogous to that on which I base my estimate of a man's chance of life at a given moment. This chance of life is just as much the man's private possession as is his purse or his keys or his medulla; but whereas I can determine these latter properties without placing him in various classes to be studied by the method of averages, I can not mean anything by his chance of life save such a calculus of probabilities as actuarial experience justifies. Just so, the greater part of the "behavior" referred to by the empiricists who would define mind in terms of it, is not *actual* behavior on the part of the being to whom this mind belongs, but *virtual* behavior, which means no more than that it is the behavior we should have reason to expect if such and such experiments were tried. But what I have called our reason to expect certain reactions can be but the experience of what actually has happened in other cases: it is a calculus of probabilities based on statistics and may be made as accurate a calculus based on as rich a collection of statistics as our

[3] This Journal, Vol. XI., pp. 645 ff.

practical interest in the case justifies. It is only an old confusion of categories that can make it seem odd that while it is *A*'s mind we are speaking of, it is not by examining *A* alone, but by studying *B*, *C*, and *D*, that the answer to our question about *A* can be obtained—and that not an approximate or makeshift answer; but the only kind of answer that makes that kind of question meaningful.

Quality of Sensation Defined

While I do not propose to let myself off with a discussion of sensibility in its simplest forms only, perhaps it will be better to say what little it is necessary to say respecting the quality of sensation before departing from the domain of the simple. Still clinging, then, to my paramecium, it will be observed that while I was willing to discuss the intensity of its sensation due to a temperature stimulus, I was careful to avoid speaking of this as a sensation of heat. For imagine an organism so simply constituted that although it reacts to stimuli of different quality (light, heat, chemical, electrical) it responds to all of them in the same way. Let us suppose its only way of reacting to any stimulus is to move, would there be any reason for attributing to it different qualities of sensation because it moved in response to different qualities of stimulus? If we had to find a name for the quality of its sensation, would it not be enough to call it a sensation of discomfort whether light, heat, chemical changes, electricity, or whatever else was responsible for its state?

It is only, then, when a subject responds to one quality of stimulus in a way it does not react to another that we have any reason for attributing to it sensations of different quality. As the development of reactions specific to different qualities of stimulus goes hand in hand with the development of specific sense organs we are only too likely to fall back on a structural definition of the qualitative differences of sensation. The sensation that results from stimulating the eye has the quality of color, while what comes from stimulating the ear has the quality of sound. *À la bonne heure;* but a man who reacts in the same way to a stimulus of red and to one of green is easily recognized to be color-blind long before we know anything about the structural defect in his retina that goes with this infirmity. In short, it is the difference in reaction to different qualities of stimulus that defines qualitative differences of sensation: what relation this difference bears to structure is a secondary question.

Finally, it is evident from our definition of quality as the what *not,* increase in the variety and richness of experience is constantly changing the meaning of each quality as it is differentiated from more and more others. Whence nothing could be more misleading than the account our older empiricism offers of the way in which ex-

perience beginning with simple ideas (or as Helmholtz called them *qualia*) leaves these unmodified and only learns to recognize new combinations of them. It can be no truer that I begin with *qualia* and come by a knowledge of the world, than that I begin with a world and come by a knowledge of the *qualia*.

The Higher Forms of Sensibility

I have, I see, allowed myself but scant space in which to discuss the phenomena of sensibility in the higher forms of life; but fortunately little more is needed than to adapt the principles already laid down to somewhat changed conditions. As long as I confined myself to those very simple forms of life, the exciting cause of whose behavior lay in their immediate surroundings and was susceptible of a purely mechanical description, it was not hard to tell what behavior I meant when I defined their conscious life in terms of their actual and virtual behavior. But as we ascend in the scale of life the stimulus to actual behavior becomes more and more complex and more and more of the mechanical conditions at the surface of the subject's body may change without altering the trend of his present conduct; while a larger and larger share of the universe remote from the subject can not be conceived different and his conduct remain the same. Thus as I sit writing, the blue of the sky out of the window, the crackling of the logs on the hearth, are of so little importance to what I have on hand that the sky might lose much of its light and the fire die down to silence and yet no change in my behavior be noted. Yet it is not denied that I do receive sensations of some sort from these and a thousand other things in and around me, so that the impression is deepened that to have a sensation is a very passive sort of experience.

Nor, being rather a lover of old terms than an innovator, do I see why sensations should not even from the point of view of the kind of empiricism I have been arguing for continue to be spoken of as passively received impressions of a certain quality and of a certain intensity. But I should interpret this to mean that the behavior one appeals to to define mind in its various aspects must of course include the behavior that doesn't take place as well as the behavior that does. What indeed is meant by asserting that the sky's blue is less intense and qualitatively vaguer to me than to my artist neighbor who is trying to paint it? Is it not that a change in this intensity or in this quality which would make him reach for a new color would leave me scribbling with the same pen? But some degree of change would disturb me too; if there were no way of estimating this virtual behavior of mine (as there would not be if I were blind) I should not be credited with a sensation of light. After all, sensibility in man

is very much like sensibility in the paramecium and I hardly regret that I have left myself so little space in which to deal with it.

The Inner Mental Life

Having come so far on the way to a definition of sensation, its quality and intensity, I was sensible the way had been dry and if I was not to overtax the patience of even such tried travelers as those who had invited me to lead them for once, it was time I hastened on to some sort of a stopping place. Therefore with a brief reference to the sensory material of dream life as presenting a most obvious case in which neither the stimulus nor the reaction in terms of which I had defined the quality and intensity of sensation was open to inspection, I left my argument to the judgment of those for whom half a word is more than enough. But as it has seemed to very distinguished writers (such as Henri Bergson) that the recognition of sensation as existing where neither stimulus nor reaction is observable to the onlooker was an altogether convincing argument against going to work on the definition of sensation in the way I have, I ought, I think, to take a more leisurely survey of this field and to devote a separate article to a consideration of the inner mental life.

Supplement

Definition of Intensity of Sensation

If r is a stimulus measured in some physical scale of intensity, and if $f(r_1, r_2)$ is the difference of intensity produced by the stimuli r_1 and r_2, respectively, then

Post. 1.—$f(r_1, r_2) + f(r_2, r_3) = f(r_1, r_3)$

which has for its solution

$$f(r_1, r_2) = \phi(r_1) - \phi(r_2).$$

If $\phi(r)$ is to have the properties traditionally given to the intensity of a sensation produced by the stimulus r, then

Post. 2.—The intensity of the sensation produced by stimulus r is independent of the *zero* of the physical scale in which r is measured. Wherefore

$$\phi(r) = \phi(r_\alpha - r_\beta).$$

Post. 3.—The intensity of the sensation produced by stimulus r is independent of the *unit* of the physical scale in which r is measured. Wherefore

$$\varphi(r) = \varphi\left(\frac{r_\alpha - r_\beta}{r_\gamma - r_\delta}\right).$$

To interpret r_α, r_β, *etc.*, empirically, let the place of r_α be taken by the stimuli r_1, r_2, *etc.*, and let r_{1+}, r_{2+}, *etc.*, be their just noticeably greater stimuli. Let $r_\beta = r_\delta = r_0$, in which r_0 is some zero of the physical scale in which r is measured, such that the equation holds

$$\frac{r_{1+} - r_0}{r_1 - r_0} = \frac{r_{2+} - r_0}{r_2 - r_0}.$$

If Weber's law held and if we imagined r_1 to remain constant while r_2 varied, r_0 would have a constant value expressed by the equation

$$r_0 = \frac{r_1 r_{2+} - r_{1+} r_2}{r_1 + r_{2+} - r_{1+} - r_2}.$$

But it is less of an assumption to suppose, not that r_0 remains constant under these conditions, but that it approaches a limit as r_2 approaches r_1. In place of Weber's law we take, then,

Post. 4.—

$$r_0 = \lim_{r_2 = r_1} \left(\frac{r_1 r_{2+} - r_{1+} r_2}{r_1 + r_{2+} - r_{1+} - r_2} \right),$$

and substituting the r's so far defined, we have

$$\varphi(r) = \varphi\left(\frac{r - r_0}{r_\gamma - r_0} \right).$$

Interpreting r_γ to be the intensity of the stimulus that produces a sensation of zero intensity and writing $r_\gamma = r_\omega$, we may set down

Post. 5.—

$$\varphi\left(\frac{r_\omega - r_0}{r_\omega - r_0} \right) = 0,$$

and substituting r_ω for r_γ, we have

$$\varphi(r) = \varphi\left(\frac{r - r_0}{r_\omega - r_0} \right).$$

Post. 6.—The intensity of the sensation produced by a changing stimulus is a continuous function of that stimulus.

Therefore, since our data are experimental with a probable error attached we may always find an analytic function of r lying within the limits of p. e. that will satisfy the conditions imposed upon $\phi(r)$.

Post. 7.—Subjective conditions (of sensibility) remaining constant, the intensity of sensation increases with the stimulus.

Post. 8.—Subjective conditions remaining constant the *rate* at which the intensity of sensation increases with the stimulus is independent of what we take to be the sensation of zero intensity. Since

r_ω is defined as the stimulus producing a sensation of zero intensity, Post. 8 amounts to saying

$$\frac{\partial}{\partial r_\omega}\left(\frac{\partial}{\partial r}\varphi\left(\frac{r-r_0}{r_\omega-r_0}\right)\right)=0.$$

From the postulates so far laid down, we have for $\phi(r)$ the unique solution

$$\varphi(r)=a\log\frac{r-r_0}{r_\omega-r_0}.$$

But our formula has as yet failed to make explicit those "subjective conditions" of sensibility that have been traditionally accepted as playing a part in the intensity of sensation produced by a given stimulus. As these have been made to depend on the j. n. g. stimulus r_+, we must determine how this r_+ enters into our expression. To do this consider the case in which a unit difference of intensity exists between $\phi(r_2)$ and $\phi(r_1)$, $(r_2>r_1)$, subjective conditions remaining constant. That is,

$$a\log\frac{r_2-r_0}{r_\omega-r_0}-a\log\frac{r_1-r_0}{r_\omega-r_0}=1,$$

in which case

$$a=\frac{1}{\log\dfrac{r_2-r_0}{r_1-r_0}}.$$

Here the only arbitrary quantity is r_2, so that if the j. n. g. stimulus is to appear in our formula at all it must be included in our definition of r_2. Whence

Post. 9.—$r_2=f(r_{1+})$.

But since from Post. 2, the r's of our formula can only enter in the form r_a-r_ω, it follows that

$$f(r_{1+})=r_{1+}$$

and if we now designate by the symbol I_r, the intensity of the sensation produced by stimulus r, we have the definition of I_r in the form

$$I_r=\frac{1}{\log\dfrac{r_+-r_0}{r-r_0}}\cdot\log\frac{r-r_0}{r_\omega-r_0}.$$

There only remains to be selected the empirical meaning of r_ω, Fechner took r_ω to be the threshold stimulus and so made the applicability of his definition to hang on the truth of Weber's law. A phenomenon much better established by experience is that of the

over-estimation of the second stimulus. Let r' be the stimulus that under conditions of over-estimation is judged equal to r; r_+' the stimulus that under the same conditions is just noticeably greater than r' and r_0' the analogue r_0. We shall define a particular case of zero difference of intensity by

Post. 10.— $$I_r - I_r' = 0.$$

We may now solve this equation for r. The solution is particularly simple when $r_0' = r_0$, and as these may be anticipated to be very close-lying quantities, we might for practical purposes identify them with their mean $\bar{r}_0$.

Writing for brevity

$$\frac{r_+ - \bar{r}_0}{r - \bar{r}_0} = k$$

we readily obtain

$$I_r = \left(\log \frac{k}{k'}\right)^{-1} \cdot \log \frac{r - \bar{r}_0}{r' - \bar{r}_0}.$$

The empirical question of the truth of Weber's law depends upon our ability to find conditions under which the subjective parameters k, r_0, r_ω remain constant. This is only a special case of the more general experimental problem, How do these parameters vary with the conditions of the experiment in which r is made to vary?

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THE ISSUES CONCERNING MATERIAL IMPLICATION

IN a recent article in this JOURNAL,[1] Mr. Norbert Wiener objects to criticisms which I have made of the relation of material implication as the basis of inference. Mr. Wiener's paper fails to join the significant issue, but this may be as much my fault as his. If others have understood my papers as he seems to have done, then in justice to myself, as well as to those who are interested in Mr. Russell's logic, I should attempt some restatement. And the spirit of Mr. Wiener's criticism is so eminently just and fair that I take pleasure in pointing out my agreement with many of his contentions. For the sake of brevity and clearness, the matters to be considered may be summarized in set theses.

1. The relation of material implication, $p \supset q$, which figures in the mathematical logic in *Principia Mathematica*, is not the relation which we ordinarily have in mind when we say that q can be inferred from p.

[1] Vol. XIII., p. 656.

2. There is no sound reason why we should abandon our usual meaning of "implies" for this unusual one. The difference between material implication and ordinary "inference" does not point to any inadvertance or shortcoming of our logical sense; it points rather to the novelty—as an "implication"—of the relation $p \supset q$.

3. The unusual character of this relation is responsible for the presence, in any system of symbolic logic which uses it, of certain "peculiar" theorems, *e. g.*, $\sim p \supset (p \supset q)$, "A false proposition implies any proposition," and $\sim(p \supset q) \supset p$, "If p does not imply q, then p is true."[2]

4. Theorems (and postulates) in a calculus of propositions are used in two ways within the system itself; (*a*) as premises *from* which further theorems are derived; (*b*) as rules, or principles of inference, *by* which theorems are derived. In any system of material implication, the theorems which we have spoken of as "peculiar" admit of valid use as premises. But they can not profitably be used as rules of inference, either within or outside of the system.

This thesis needs elucidation. The theorems in question *can be* used as rules of inference, and there is nothing in the nature of the system of material implication, as developed in *Principia Mathematica,* to prevent their being so used.[3] But their use in this way gives such propositions as $p \supset (q \supset q)$, "If p is true, then q implies q," and $\sim[(pq) \supset q] \supset q$, "If '$p$ and q are both true' does not imply q, then q is true." When used as rules of inference outside the system, these "peculiar" theorems give such propositions as, "To-day is Monday implies $2+2=4$," and "Socrates was a solar myth, implies that to-day is Monday." It is characteristic of the propositions so obtained that they assert a "logical" relation between statements which are likely to be irrelevant. Very few of the "peculiar" theorems are even printed in *Principia Mathematica,*[4] although any number of them can be derived from the postulates. Their presence in the system does not, in practise, affect the proofs in later sections of that work.

5. The system of "strict implication" which has been presented

[2] These theorems are the result of using the "principle of addition," $p \supset (p > q)$, and the definition $(p \supset q) = (\sim p \vee q)$, in the same proof. Whenever this procedure produces a theorem which can not be otherwise proved, this theorem belongs to the class I speak of as "peculiar."

[3] The method by which a theorem, or postulate, is used as a principle of inference in *Principia Mathematica* is as follows: The proposition in question must have as its main, or asserted, relation, an implication, $\supset$. Other symbolic propositions are substituted for p, or q, *etc.*, wherever p, or q, *etc.*, appear in this proposition, and in such wise that what precedes the asserted $\supset$ becomes identical with some previous proposition. What *follows* this $\supset$, is then separately asserted as a new lemma or theorem.

[4] See *2.02, *2.21, *2.24, *2.5, *2.51, *2.52, *2.521, and *3.4.

in my papers is such that none of the "peculiar" theorems of material implication can be proved from its postulates, but all the *other* theorems of material implication can be so proved (supposing, of course, each material implication replaced by the corresponding strict implication).[5]

6. Therefore, a distinguishing mark of material implication as a species in the genus "possible systems of symbolic logic" is the inclusion of these "peculiar" theorems.

7. By neglecting ever to use these theorems as rules of inference, one may find the system of material implication a sufficiently workable organon of proof, because in making this convenient omission, one uses precisely those principles which are *not* peculiar to material implication, but conform to the ordinary meaning of "implies."

The above theses are sufficient to establish the fact that the system of material implication is defective, in this sense: it contains any number of theorems—theorems about "implication"—which can never be of the slightest value as principles of inference. And it is precisely by the inclusion of these useless theorems that it differs from another, equally consistent, system of symbolic logic. These are the more important considerations; and if I read Mr. Wiener correctly, he does not deny anything so far stated, though he might desire to offer extenuation for what I have called the "defect" of material implication.

We now approach more difficult matters, and care should be taken not to "read into" the theses which follow anything which is not stated.

8. The system of material implication, as developed in *Principia Mathematica,* is derived from precisely formulated postulates and definitions, by operations which are clearly stated and rigorously adhered to. In exactly that sense, it is a mathematically consistent system.

9. The assumptions are true of *their own* meaning of "implies," and the theorems are true in the same sense.

10. The assumptions and theorems are such that whoever grants the truth of the assumptions can not consistently deny the truth of the theorems. The theorems are relevant, in content, to the postulates: the theorems ("peculiar" ones not excepted) *can be,* each and every one, inferred from the postulates.[6]

Mr. Wiener seems to think that I deny some one or more of the last three theses,—I am not sure which ones.

[5] This statement is not quite accurate, because, in developing the system of "strict implication," I made an error which Mr. Wiener does not note. But that error is easily corrected.

[6] See "The Matrix Algebra for Implications," this JOURNAL, Vol. XI., esp. p. 598.

11. It *is not demonstrated* in *Principia Mathematica* that the theorems of the system of material implication can be inferred from the postulates.

Mr. Wiener devotes the larger part of his paper to the discussion of this thesis. Unfortunately, he seems to confuse "*p* can be inferred from *q*" with "*p is* inferred from *q*," and with "It is *demonstrated that p* can be inferred from *p*."[7] If every proposition which can be inferred from another were, by that fact alone, demonstrated to be so inferrable, then "proof" would be unnecessary. Also, he seems inclined to fall back upon the assertion that the theorems are derived from the postulates by (mathematically or symbolically) rigorous operations.[8] This would be to beg the question whether a derivation based upon material implication is, or can be, inference.

The *pros* and *cons* of this matter can be presented most succinctly in the form of a dialogue between *X* and myself. *X*'s sentiments may not be Mr. Wiener's; and any rhetorical advantage which I may take of my straw-man is not intended for him. But I try to state both sides fairly: the main object is elucidation of the issue. At best, this is not easy, and the reader should have constantly in mind the character of material implication. "*p* materially implies *q*" means exactly: "At least one of the two propositions, '*p* is false' and '*q* is true,' is a true proposition;" or "It is false that *p* is true and *q* false." If *p* is false, then *p* materially implies *q*; if *q* is true, then *p* materially implies *q*. Of any two true propositions—however irrelevant in content—each materially implies the other. Of any two false propositions, each materially implies the other. Of any two propositions one of which is true and the other false, the false one materially implies the true one. Of any two propositions chosen at random, it is certain in advance that at least one of them materially implies the other.

X. It is demonstrated in *Principia Mathematica* that if the postulates of the system of material implication are true, then the theorems are true.

L. Really, you beg the question with your "if . . ., then . . .," which may mean a connection of the kind we call "logically necessary" between the content of the "if" clause and the "then" clause,

[7] See his paper, the last sentence beginning on page 658. This is Mr. Wiener's final word on the topics with which we are concerned. The remainder of his article is given over to discussion of certain related matters and incidental criticism of a view which is not mine. He attributes it to me on the basis of one sentence, the context of which he ignores, and a footnote which he has misinterpreted.

[8] On page 657, where one of the two issues is stated to be: "Is the coherence and self-consistence which it [the Russellian logic] claims for itself, and tries to justify by an orderly derivation of its theorems from a small and simple set of postulates, genuine or factitious?"

or may indicate only a relation of material implication, such as, "If to-day is Monday, then $2+2=4$."

X. It means a material implication, but that makes no difference to the argument. The nature of material implication is such that if it holds between postulates and theorems and the postulates are true, then the theorems are true. And *that* is the criterion of valid inference.

L. I might ask you whether this "if . . ., then . . ." is a material implication, but I refrain. As a fact, it is a strict implication.[9]

X. Then you grant my last statement?

L. I grant that the postulates of material implication are true, of their own meaning of "implies," and since true propositions do not materially imply false ones, the theorems are true in the same sense. Still I must point out that true postulates may materially imply theorems which are *quite irrelevant.* That is what the "Too Brief Set of Postulates"[10] was written to show. Does that paper prove that a true postulate may materially imply theorems which are true but irrelevant?

X. In a way, it does. The assumption in that case is a "postulate" by courtesy only; but I grant that you can write down a true assumption which will materially imply irrelevant propositions. However, that is not the point: the important thing is that material implication can never hold between true postulates and *false* theorems.

L. I have said that true propositions do not materially imply false ones.

X. Then you haven't a leg left to stand on.

L. Wait a bit. Are the postulates of material implication demonstrated in *Principia Mathematica?*

X. Of course not; but they are explained so that anybody can see they are true.

L. They are true, as I have said, but are they demonstrated?

X. No.

L. Then in what sense is the truth of the theorems which they materially imply demonstrated?

X. In the sense that, whether the postulates are true or not, if you *grant* the postulates, you must grant the theorems.

L. I am sorry if I seem to split hairs, but your statement is not sufficiently precise. We "grant" assumptions in two senses,—either because we believe they are true and are ready to believe what they imply, or for the sake of the argument and to discover their logical

[9] The postulates of the "Matrix Algebra" give the theorem, $[(p \supset q)p] \cup q$, where $\supset$ indicates a material implication, but $\cup$ is a strict implication.

[10] This JOURNAL, Vol. XII., p. 523.

consequences. "Postulates" are usually granted in the second sense, are they not? Do you use "grant" in this sense?

X. It is not of the smallest consequence.

L. It would not be if we were concerned with the ordinary meaning of "implies," but material implication is peculiar in that respect. Let me ask you: Do you mean that, whether the postulates of material implication are, in fact, true or not, if they *were* true, the theorems *would necessarily* be true?

X. There is no mysterious physical or causal connection in material implication—or any other kind—if that is what you are driving at.

L. But tell me: do you admit that "Socrates was a solar myth" materially implies $2+2=5$?

X. Yes; but only because Socrates was *not* a solar myth.

L. Quite so. But if Socrates *were* a solar myth, would it be true that $2+2=5$? If you granted some paradoxer his assumption that Socrates was a solar myth, would you feel constrained to go on and grant that $2+2=5$?

X. I suppose you mean to harp on "irrelevant" some more.

L. I mean precisely this: The postulates of the system of material implication in *Principia Mathematica* are not demonstrated, and the "proofs" of the theorems show only that they are materially implied by the postulates. Suppose, for the moment, the postulates were not true. Then not only might the theorems be false, but—for anything that is *demonstrated*—they might be such that if the postulates *were* true they would *still* be false.

X. What of it, since the postulates are, in fact, true?

L. Only this: the relation which is established between postulates and theorems, is the relation which *is established*,—whether the postulates are true or not does not alter *that*. And the relation which is established between the postulates and theorems of the system in question is precisely the same relation which you admit to hold between "Socrates was a solar myth" and $2+2=5$. Perhaps I am a purist, but I should never call the establishing of a connection like that "demonstration" or "proof."

X. But you know well enough that the postulates and theorems of the system of material implication are relevant to each other.

L. Yes, I know that they are, in fact, relevant. As I have said, the theorems can be inferred from the postulates. Once more, the question is not whether they *can be* inferred, but whether this is *demonstrated?* You see the question always comes back to the proper meaning of "implies" which ought to figure in demonstration and proof. "Proof" requires that a connection of content or meaning or logical significations be established. And this is not done for

the postulates and theorems in material implication: what is more, it can not be done without calling on principles outside the system.

X. Let me see if I understand you. You grant that the relation of material implication is such, and the procedure of the early sections of *Principia Mathematica* is such, that the postulates being, in fact, true, and the fact that they materially imply the theorems being established, it follows that the theorems are true?

L. Yes.

X. And when you say that the theorems are not demonstrated, all you mean is that they are not shown to be relevant in content to the postulates?

L. Precisely that. You think that this is a very little "all"; I think it is a big "all." For a relation which does not indicate relevance of content is merely a connection of "truth values," not what we mean by a "logical" relation or "inference."

It is regrettable if my use of "demonstration" and "proof" has confused any one, but I think I have used the terms in their commonly accepted and proper signification.

And now I think the matter is concluded, fairly to all concerned.

X. But Mr. Russell has a new and better meaning of "demonstration." You do not even mention that. In the later sections—

L. May I not make my offering to the gods without reciting the whole *Principia Mathematica*?

And should we speak of new and better meanings, or of new and better analyses? "Implication" and "proof" are pretty fundamental categories. The contributions of Mr. Russell and Mr. Whitehead are important—none more so—and yet they will not thank us if we speak as though logic and mathematical demonstration were things which they invented and can do with as they please. We are always in need of clearing away confusions and realizing more clearly our own intentions. But where the basic things of human reason are concerned, genuinely novel meanings are justly regarded with suspicion.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Human Worth of Rigorous Thinking. C. J. KEYSER. New York: Columbia University Press. 1916. Pp. 314.

This book is a collection of essays and addresses which have appeared in various periodicals during the last fifteen years. They concern a variety of topics, ranging from issues of such a metaphysical character as that of "The Existence of the Hypercosmic," and

mathematico-logical questions, such as are exemplified in a paper "Concerning Multiple Interpretations of Postulate Systems and the Existence of Hyperspace," to general educational and cultural problems about "The Human Worth of Rigorous Thinking," "Research in American Universities," *etc.* Although the author claims in his preface that all the separate papers in the volume are concerned with the central question indicated by the title, the bond of union between them is very loose. In so far as the book possesses any single focal idea, it is this: mathematics has its origin in the fact that the intellect, "instead of endlessly and stupidly besieging the illogical world of sensible magnitudes with the machinery of logic, . . . has created for itself another world" (p. 21)—the world of pure mathematics, which may resemble the world of sense, but is not constrained by it. Professor Keyser deduces the irrationality of the world of sense from the existence of sensory limina and the consequent intransitive character of the relations of equality given by the senses. However, there is nothing self-contradictory or irrational about intransitivity. The relation of paternity is not a bit less comprehensible because the father of my father is not my father. Why should the fact that two weights, each of which is indistinguishable from a third weight, may be distinguishable from each other, cause any greater perplexity? The only contradiction to be found in the intransitive nature of the relation of indistinguishability arises from the mistaken and gratuitous assumption that what we perceive when we are unable to discriminate between, say, two weights, is that they possess some common quality, which may be called their weight. It is perfectly possible to give a consistent logical analysis of the relation of indiscriminability, even though it is intransitive. Of course, it is quite true that the reference of our intransitive experience of indiscriminability to a base-system that possesses the ordinary properties which we are accustomed to attribute to measurement, greatly facilitates the interpretation and the correlation of the facts of sense; but it involves merely the substitution of a simpler order for a more complex one, not the creation of Order out of whole cloth. Mathematics has its origin in any logical use of the intellect whatever, and if the intellect chooses to "besiege the world of sensible magnitudes with the machinery of logic," it is there that mathematics begins.

In Chapter IV., which is entitled "The Walls of the World: or Concerning the Figure and Dimensions of the Universe of Space," Professor Keyser discusses Pascal's definition of the Universe, *i. e.*, space as "an infinite sphere whose center is everywhere and whose periphery is nowhere." He shows that this is literally true, or that it is at any rate a precise formulation of our usual beliefs concerning space. He then suggests that it might be possible to form a space

infinitely larger than our ordinary space by considering a sphere whose radius is a line, the length of which is measured by the number of the continuum. This is most unsatisfactory. The measurement of a line does not primarily consist in its decomposition into an aggregate of unit distances, but rather in its traversal by the end-on-end repetition of a unit vector. In the first place, this makes an integer which measures a distance, a *relation-number*, for the unit vector is repeated end-on-end in some sort of a series. In the second place, unless we make an entire revision of our definition of measurement, this number must either be finite, or the number of a progression, or the number of a regression, or the number of a progression followed by a regression, for these are the only numbers pertaining to series in which every term has both an immediate predecessor and an immediate successor. It is possible to see how the definition of measurement might be altered so as to apply to magnitudes with a transfinite ordinal number, or with other relation-numbers of somewhat similar formal properties, for in a well-ordered series every term has a next successor; but in a dense series like the continuum there can be no operation analogous to end-on-end repetition. As to the question whether the cardinal number of the continuum may not be the *cardinal* number of some well-ordered series of vectors determining a transfinite magnitude, one can only say that this possibility depends on the validity of Zermelo's *Auswahlsprinzip*, which there is no hope of either proving or disproving.

Chapter VI.[1] is entitled "The Universe and Beyond." It is devoted to the thesis that "every universe is a component of an extra-universal" (p. 123). This conclusion is in contradiction with one more recently expressed by Professor Keyser. In his *Science and Religion*, which appeared in 1914, he says: "That there is a universe is a fact we can not escape." The context here makes it clear that Professor Keyser means by "universe" an all-inclusive whole, which can have no "extra-universal." Curiously enough, this latter statement occurs in a proof of the existence of the superrational which adduces the universe itself as an instance of a superrational entity. In the present book, which is in this respect much more in accord with the trend of modern logic, the "extra-universal," which seems to be a near relative of our author's more recent "superrational," is sought for in the world of pure essences, which are exemplified by mathematical systems. In the course of his arguments, Professor Keyser indicates his adherence to the consistency theory of truth, as opposed to the correspondence theory, though he gives no grounds for his choice.

In the next chapter we find an interesting illustration of the

[1] Reprinted from *The Hibbert Journal*, January, 1905.

tremendous changes which have come over the theory of infinite numbers during the last twelve years. The title of this chapter is "The Axiom of Infinity: a New Presupposition of Thought." Here, on grounds which appeared sound enough at the first publication of this paper in 1904, but are completely obsolete to-day, Professor Keyser arrives at conclusions which are now held for other reasons. The thesis is that the existence of infinite number has never been proved strictly, and is at the best but a highly probable hypothesis. The proofs of the existence of the infinite presented by Bolzano and Dedekind are discussed, and it is shown that they are based on the gratuitous assumption that some process or other may be repeated an indefinite number of times. The same claim is also made concerning a proof given by Russell in his *Principles of Mathematics,* but this argument is not discussed at all. Nothing explicit is said of those proofs of the existence of the infinite which are derived from the general theorem that the number of subclasses of a class is always greater than the number of its members, and that therefore the series of the positive integers can be extended as far as we wish, so as to contain $\aleph_0$ terms. It was only when the fallacy of this argument was exhibited by Bertrand Russell in connection with his theory of types that the indemonstrability of the Axiom of Infinity was finally rendered almost certain. Professor Keyser's paper, however, is a perfectly valid refutation of the two arguments for the existence of the infinite against which it is directed.

A passage in this paper which would require a still more thorough remodeling to be satisfactory from the standpoint of the present theory of infinites is the following: "*Any class or assemblage (of elements), if infinite according to his* [*i. e.,* Bolzano's] *definition of the term* [=non-inductive, in the terminology of Whitehead and Russell], *enjoys the property of being equivalent . . . to some proper part of itself*" (p. 151). It has since been shown that this statement depends for its truth on Zermelo's *Auswahlsprinzip,* concerning the correctness of which there is the greatest diverseness of opinion among mathematicians. Few indeed care to entrust any of their important theorems to such a shaky foundation. Although one must remember that we are here dealing with an article which, in its original form, antedates the Zermelo controversy, it would hardly be asking too much to expect that in a book designed for non-mathematicians, which can consequently not presuppose in its readers any acquaintance with the status of the mathematical disputes of the present day, we should find at least a footnote pointing out the revisions which would be needed to render the text rigorous according to the standards of the time.

Professor Keyser claims that it can be established inductively

that the probability of the truth of the Axiom of Infinity is "the highest yet attained" (p. 162). However, there is not a single empirical criterion which would avail us in the least in the distinction between an infinite world and one with 101,000,000,000,000 entities in it. All the observations of science are just as susceptible to an explanation which presupposes an enormous, though finite, world, as they are to an explanation involving a continuous or infinite space. The only inductive method which would tend to prove the infinitude of the world is the Method of Agreement, and it is well known how unreliable this is when not combined with the Method of Difference. The question whether space is finite or infinite is of much the same character as that whether it is Euclidean or non-Euclidean: in each case, it is inconceivable that the question should be settled by inductive evidence, and the choice of which hypothesis we are to use in our scientific investigation is entirely a matter of technical convenience.

In Chapter XIII., entitled "Concerning Multiple Interpretations of Postulate Systems and the 'Existence' of Hyperspace," Professor Keyser tries to show that "hyperspaces have every kind of existence that may be warrantably attributed to the space of ordinary geometry" (p. 256). After first maintaining that the space of our experience is irrational, and hence not a suitable subject-matter for a mathematical science, on grounds the falsity of which has already been exhibited in this review, Professor Keyser proceeds to investigate the nature of the existence which belongs to our ordinary three-dimensional space. He claims that every system satisfying the postulates of geometry must have properties not accounted for in these postulates, and that the properties of the system which is three-dimensional space *par excellence* are extensional in character. "Extension," according to him, is derived from a sort of schematization of the space of our experience. He says that the mind arrives at it by "doing certain things to the sensibles, to the raw material of our mental architecture" (p. 252). It is the particular geometry of this extensional space that he calls pure geometry.

After giving a casual mention to the view that geometry consists, not in a special deductive system in which complete propositions play a part, but in a general form of deduction, which concerns itself with "propositional functions," in which the points, lines, *etc.*, are variables, not constants, Professor Keyser proceeds to discuss four-dimensional space. He holds that this can be obtained by considerng a system with four independent kinds of "extension." It is clear, then, on the basis of what we have already seen, that the assertion that four-dimensional space exists in the sense in which it is

here affirmed, reduces itself to the statement that our spatial experience may in some way be so schematized as to produce a manifold of "points" depending upon four independent measurable quantities. This may be so, but in all Professor Keyser's argument, there is not one iota of evidence to prove it, and it is certainly very far from being immediately obvious. Indeed, it is an hypothesis which almost every one will reject, once it is explicitly stated. As a consequence, the entire thesis of the paper falls to the ground. Four-dimensional geometry certainly exists as a general form of deduction, but there is no reason whatever to assume the existence of four-dimensional *space*.

The remaining articles comprise a very good review of the *Principia Mathematica* of Whitehead and Russell, several interesting pleas for the cultural value of mathematics, and papers on more general educational topics. As a whole, the book is very readable, yet contains much that is worthy of consideration by the serious student, be his interests primarily mathematical or philosophical.

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Group Theories of Religion and the Religion of the Individual. CLEMENT C. J. WEBB. London: The Macmillan Company. 1916.

Mr. Webb, who is a fellow of Magdalen College, is best known in this country as the author of the little book on the *History of Philosophy* in the Home University Library, though he has to his credit two much more ambitious volumes of a theological nature. The book under review presents in outline the fundamental views of what might be called the Durkheim school of sociology concerning the nature of religion, and subjects some of them to a rather severe, but probably well-merited criticism. The criticism, though severe, is discriminating, the leader of the school coming off much better than some of his followers. Even so, it is a question whether M. Durkheim does not deserve to fare even better than Mr. Webb permits; for Mr. Webb's book was written (though not published) before the appearance of *Les Formes Elémentaires de la Vie Religieuse*, and some of the positions criticized in the book under review are to be found only in Durkheim's earlier work (in the *Année Sociologique*) and are considerably modified in the later and larger treatise. There is, however, still a good deal left in *Les Formes Elémentaires de la Vie Religieuse* which is open to Mr. Webb's criticism—notably the theory of the social origin of the categories. After analyzing this hypothesis and the facts on which it rests, Mr. Webb concludes that what truth there is in it reduces to the rather mild assertion that the individual gets his point of view from his own group; "what sociology can ex-

plain is not why we use categories—meaning by that word 'principles of classification of universal application'—but why certain particular principles of classification were first hit upon rather than others."

The disparaging view of religion held by many of Durkheim's followers—notably Mauss, Hubert, Cornford, and Miss Harrison—which would reduce religion ultimately to the survival of a primitive "collective representation," is attacked with a good deal of enthusiasm and considerable skill. But the best of his ammunition the author reserves for M. Lévy-Bruhl and his theory of a prelogical mentality incapable of using the principle of contradiction—of which low mental state religion is an unfortunate survival. According to our author it is M. Lévy-Bruhl who is innocent of the principle of contradiction and does not even know what it means. Mr. Webb's own view of religion would reconcile both individualistic and group theories. "Religion can never assent to an individualism which finds the characteristic of individuality in bare exclusion of all that is other than the individual itself, and thus robs the individual itself of all content; since the religious soul knows that only in proportion as what it finds in itself is not its own, but God's, has it anything worth calling its own. But, on the other hand, the religious soul must find this in itself; and if it has no self in which to find it, it can not find it at all. That what has become its own should cease to be its own would mean that having found itself in losing itself, it would then lose itself again, and this time without finding itself at all."

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JOURNALS AND NEW BOOKS

AMERICAN JOURNAL OF PSYCHOLOGY. January, 1917. *Attitude in Relation to the Psychological Judgment* (pp. 1–37): S. S. GEORGE.—From a series of controlled introspective studies the conclusion is drawn to the effect that an observer can maintain a constant disposition or attitude toward judgment material. Judgments of "greater," "equal" and "less," are the result of a constant attitude while "doubtful," "no-difference" and "or-judgments" represent variations from the constant type. *The Significance of Stimulation in the Development of the Nervous System* (pp. 38–56): WILLIAM H. BURNHAM.—A review of the important studies of factors that develop the central nervous system indicate that stimulation or the functional development is most important. The importance of dynamic physiology in relation to psychology is indicated. *An Analysis of a Phase of the Process of Classifying* (pp. 57–116):

SARA CAROLYN FISHER.—An introspective, analytical study of the classifying process shows that the first step consists in the manner of perceiving. In this perception there arose the consciousness of resemblance or the sense of its absence. When no resemblance was noted the course of attention was retarded. *Research in Pathological Psychology and Biochemistry* (pp. 116–140): EDWARD COWLES.—The development of psychological experimentation along with the physiological and biochemical researches in the American hospitals for the insane is discussed. Psychiatry is laying broader foundations based on dynamic psychology and the new revelations of physiology. *On the Number of Articles of Psychological Interest Published in the Different Languages* (pp. 141–150): SAMUEL W. FERNBERGER.—English psychological interest is increasing while the French is decreasing. Students of psychology should have a ready knowledge of English and German. *Minor Studies from the Psychological Laboratory of Vassar College. A Study of Freshmen* (pp. 151–155): SOPHIE D. WHITE, SYBIL MAY, M. F. WASHBURN.—Several tests on freshmen showed that good results in them is correlated with good work in freshmen classes. *Directed Recall of Pleasant and Unpleasant Experiences* (pp. 155–157): MILDRED F. BAXTER, KOTO YAMADA, M. F. WASHBURN.—Time for recalling unpleasant experiences slightly longer than pleasant. Pleasantness more often considered mental and unpleasantness physical. *Accuracy of Visual Memory and Speed of Verbal Perception in Poor Spellers* (pp. 157–158): ANNETTE HOWELL, LUCILE HOPSON, M. F. WASHBURN.—Good spellers as a group have a more accurate visual memory. *Book Notes* (pp. 159–162).

Arnold, William R. Ephod and Ark: A Study in the Records and Religion of the Ancient Hebrews. Harvard Theological Studies, III. Cambridge: Harvard University Press. 1917. Pp. 170.

Farrell, H. P. An Introduction to Political Philosophy. New York and London: Longmans, Green, and Company. 1917. Pp. ix + 220. $1.25.

Marvin, Walter T. The History of European Philosophy: An Introductory Book. New York: The Macmillan Company. 1917. Pp. xiii + 439.

Smith, Henry Bradford. A Primer of Logic. Pulaski, Va.: H. D. Smith and Brothers. 1917. Pp. 48.

NOTES AND NEWS

READERS familiar with Schiller's *Studies in Humanism* will recall his clever *jeux d'esprit* in the way of dialogues purporting to have been held between a disciple of Protagoras and an orthodox thinker

of the fourth century, B. C. Mr. Schiller's cleverness has had an outcome recently which he could hardly have anticipated. Dr. White in his just published book, *Mechanisms of Character Formation,* quotes (without reference to Schiller) from the "Papyri of Philonous" no less than three times, once at great length. This is a tribute to Dr. Schiller's literary skill, but it is also unfortunately indicative of the uncritical way in which it has become fashionable for many Freudian writers to deal with anthropological and literary sources and documents. It would assist the more general acknowledgment of the many strong points in Freudian psychology, if the members of that school could agree upon the selection of a competent censor to pass upon all their anthropological and literary interpretations before they see the light of day.

DR. FELICE FERRERO, American representative of the Italian press, has recently given a series of three lectures on the "History of Science" at Northwestern University. The titles of the individual lectures are as follows: "The Period of Philosophical Speculation: Theories of Evolution and Arithmetic"; "The Shift to Experimental Methods: Aristotle, the Naturalist, the Astronomer, and the Physicist"; "The Great Lights of Ancient Science: Archimedes and Hipparchus."

GEORGE HERBERT PALMER, Alford professor of philosophy in Harvard University, delivered the annual charter day address in the Greek theater of the University of California, the forty-ninth anniversary of the chartering of the university of California by the state.

PROFESSOR EDWARD B. TITCHENER, head of the department of psychology at Cornell University, recently gave a lecture at Princeton University on "The Association of Ideas."

PROFESSOR JOSEPH JASTROW, of the University of Wisconsin, recently gave a series of lectures at the Ohio State University on "Sources of Human Nature."

DR. A. H. SUTHERLAND, instructor in psychology at Yale University, has accepted a position as psychologist in the public-school system of Los Angeles.

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PSYCHOLOGY AND SCIENTIFIC METHODS

A CUL-DE-SAC FOR REALISM

THIS is an intimate talk with my fellow realists. We believe that the future lies with us—that idealism is on the wane, and some form of realism destined to become the dominant philosophy. But which form?

Perhaps most of us, on this side of the Atlantic, can agree upon an ontologically monistic realism. Consciousness does not exist, in the sense James had in mind; there is no peculiar stuff, or realm, that is mental, as distinguished from the world of physical objects; there is no sign of anything in the existing universe but *qualia* in relation. There are, indeed, some among us who agree with the prevalent British belief in diaphanous, or undiaphanous, mental activity or awareness, in subjects or egos or souls, or some other non-physical entities. They will find no attack in this paper upon any such beliefs. But in order to avoid any misunderstanding, I wish to state as explicitly as possible that I personally side with the dominant tendency in American realism in denying the existence of a non-physical stuff or realm or awareness or subject or ego—"there ain't no sech animal." The "mental" is a subclass of the physical, or refers, if you prefer, to a relation between certain physical entities. This is ontological monism.

With that question the contention of this paper has nothing to do. But I am going to attack *epistemological* monism; and I wish to leave no excuse for any further confusion of my epistemological dualism with ontological dualism. In my papers published several years ago in this JOURNAL and in *Mind* I tried to make my position in this regard clear. But my epistemological dualism was none the less interpreted by several critics as if it must be a Cartesian dualism. I was even called an idealist, and classed among the "writers who are now so superbly stooping to take notice of realism."[1] It is important to speak of this, because other realists of greater note than I have been similarly misunderstood. For example, Lovejoy's keen arguments against Perry's epistemological monism[2] were treated

[1] E. B. Holt, in *The New Realism*, p. 307.

[2] This JOURNAL, Vol. IX., pp. 673 ff.

by Perry as if they were attacks upon realism. It sometimes seems as if some of our contemporary thinkers were unwilling to call anybody a realist who is not an epistemologically monistic, or "naïve" realist. But actually not a few of us who equally scorn to solve any problem by calling a troublesome entity "subjective" or "mental," who are pan-objectivistic realists, and—having taken our licks at idealism—have as good a right as any to the popular sobriquet new-realist, believe the pathway of epistemological monism to be a *cul-de-sac*. Realism, we protest, does not imply it; and it is precisely the contention of this paper that realism must abandon its wooing of this hopelessly acidulous vestal and return to the embraces of its old love, epistemological dualism.

For the sake of saving space, let me call these rivals for the hand of realism by their initials. E. M. has been, then, a veritable will-o'-the-wisp, an *ignis fatuus* which realism has been straining every nerve now for some years to grasp; but the result is "ever not quite." E. D., the jilted partner, has been showered with jeers, and deemed a grass widow for good. A few, more keenly alive to the situation, or less blindly obstinate in their pursuit of the new love, have attempted a sort of compromise. But this experiment in bigamy has met with attacks from both sides; and whatever aspect of that compromise-doctrine embraces E. M. will be subject to the criticisms that make against a chaster union. No flirting, even, with the lady!

The reasons why it seems to me, with many others, that E. M. must be rejected, in spite of her great superficial attractiveness, are not new. It may arouse a groan to restate them. But in spite of repeated and excellently clear statement, they seem never to have been fully grasped by some of the ablest of the naïve realists. And those who have attempted to meet these objections seem to us not to have satisfactorily succeeded.

Let us first note, however, just what the admitted actual situation is. *The character of our sense-qualities is a function of the nature of our sense-organs and brains, and of our position in space.* Consider an unchanging object in the space surrounding my body. As I change my position in space, all the sense-qualities which seem to me to reside out there in the object change. If my eyes were to be changed, however slightly (so as to be similar, for example, to the eyes of certain other men or animals), these sense-qualities would again be changed. If the nature of my brain were to be changed, or if the nerve from my eye were to reach, say, the auditory tract in my brain, my sense-qualities would be still different.

Now of these familiar and admitted facts four, and so far as I can see, only four interpretations can be given. The first is, that an infinite number of qualities exist permanently in the object, each

revealed by the proper perception-mechanism. The second is, that a new quality replaces the old in the object whenever any change in the position or nature of a perceiving organism is effected. On this second interpretation there will be *on occasion* a great many different varieties of the same generic quality existing simultaneously in the object—namely, when many different observers are perceiving it. Either of these alternatives may fairly be called E. M. The third possibility, which I espouse, is that the sense-qualities which exist in my experience when I look at an object are not, numerically, the very qualities that exist in the object, but are effects of those qualities produced in me, representative of the qualities which exist in the object.[3] The fourth possibility is that my sense-qualities exist neither in me nor in the object which I am facing, but in some other place. Both the third and fourth views are E. D., making a numerical duplicity between our sense-qualities and the qualities residing in or constituting the object itself.

When I assert that only these four views are possible, I mean, *if we are to find a definite position in the time-space order for every existing quale.* But if we are ontologically monistic realists (and to those only am I now speaking), we must find such a position for every existing *quale.* We shall not be content to say that our sense-qualities are "subjective," or "appearances," or some such "mental" thing which need not have any location in space. That would be, anyway, but an easy way of shirking the problem by leaving it a mystery. Nor can we say that sense-qualities are subsisting entities that may exist in the mental order and not in the physical order. For we hold that all existing realities form *one* order—the physical world-order. And no entities more patently exist than our sense-qualities. They are *data datissima* indeed. They must, then, exist *somewhere* in the physical world-order, at least during the time when they exist within our experience. The question is, *where?* E. M. says: Out there in the objects. E. D. says, Somewhere else; the common form of it saying: In us.

It is impossible to get forward unless we can agree to take one horn or the other of this dilemma. I must, therefore, protest against Woodbridge's evasion of it. "A circle appears different to different observers differently situated. . . . Let us suppose that ten observers are given in different situations, then it is evident that the circle will appear ten times conformably to the ten situations. But over and above this evident fact *it is assumed that there will be ten different shapes which are existentially separate and distinct from one*

[3] The phrase "in me" is vague and can only be satisfactorily interpreted by an explanation longer than is here possible. "In my brain" is perhaps the least objectionable equivalent, but it will inevitably provoke misunderstanding.

another, and of which each is existentially separate and distinct from the circle itself. That is, if the circle appears to one observer as a flat ellipse, then it is assumed that the *appearance* itself is a flat ellipse. What these shapes are in their essence, where to put them, what to do with them when they are put there, how explain their relations and connections with one another and with the circle—here are problems to tax all our ingenuity, and problems on which no experiment or no fact of experience can throw any light. To affirm that if a circle appears elliptical, then its elliptical appearance is an ellipse, is not to state a fact, it is to make an assumption which condenses whole volumes of speculative philosophy and psychology into a single sentence.''[4]

It is a matter of nomenclature whether we shall call the ''elliptical appearance'' ''an ellipse'' or something else. The *fact* in the case is this: there is a sense-quality within my experience, which has undeniable existence within my experience at least, and which is different in character from the sense-quality which I have when I change my position. *Where* does this undeniably existing *quale* exist? To say ''the circle appears elliptical'' is a shorthand way of talking of the case. Just what does that statement mean? It is an expression of our natural, but unanalyzed realism. There is a permanent object, a circle, of which these changing sense-qualities are appearances. As realists we agree to that. But accepting the existence of the permanent circle must not make us forget the evanescently existing sense-qualities which are ''appearances'' of it. An ''appearance'' must exist *somewhere,* it would seem. Certainly this sense-quality, which we are now calling an ''appearance,'' must exist somewhere—if we are giving up the category of ''mental stuff'' which does not need to exist in any *place.* Our assertion, then, is not that ''the elliptical appearance is an ellipse''—which seems to be only a verbal substitution—but that the ''elliptical appearance,'' as Woodbridge terms the sense-quality in our experience, *is a datum,* a bit of reality, which must exist somewhere. I do not share his pessimism with regard to the questions where to put it, how explain its relations, *etc.,* although I can not here discuss these questions very much. The point to grasp now is, that the dilemma between E. M. and E. D. is a real one. This bit of reality exists either in the object outside the organism, *or* in the organism (or somewhere else).

The problem, so often explained by critics of E. M., is not one about the stuff things are made of, it is about the number, the order, the location of the bits of reality of which the existing universe is made up. Yet Woodbridge, in this and other essays,[5] Dewey in vari-

[4] This JOURNAL, Vol. X., p. 14. Italics in original.

[5] *E. g.,* ''The Belief in Sensations,'' this JOURNAL, Vol. X., p. 599.

ous essays,[6] and most of the others who have undertaken to reply to these critics, persist in taking their arguments as if they were in behalf of idealism or ontological dualism, and so leave them still unanswered. For example, in a former article[7] I cited the case of a number of mirrors imaging a single object. My contention was that (just as in the case of perception by various human organisms) the various images (sense-qualities in the case of the organisms) were qualitatively different from one another, as well as existent in different places, and, therefore, clearly, numerically different. If the situation is similar in the case of perceiving organisms, E. D. is proved true; different sense-qualities (qualitatively and numerically) are produced by the object in different organisms. But Holt, after quoting a passage from my article, makes the brief comment: "Thus it is proved to the satisfaction of idealists (*sic*) that two mirrors can not image the same object."[8] Of course they can. The *question* is, Do the images exist *in the object*, are they numerically identical with some parts of it, or, are they numerically different, existing at other points in space, and only *similar* to it and representative of it?

If, then, the dilemma is accepted, I can proceed to state the three principal reasons why E. M. seems untenable, and some form of E. D., therefore, necessarily true.

I. *Contradictory qualities can not coexist at the same point in space at the same time.* If either variety of E. M. is true, they must so coexist, as we noted above. So if this italicized assertion is true, E. M. can not be true. A few venturesome thinkers have therefore denied the assertion. Space does not permit an extended discussion of their views. But discussion is hardly useful here, for the views in question are hardly more than assertions, without careful consideration of the difficulties in their way. McGilvary has sketched for us a world[9] in which vast numbers of "immaterial" *qualia* exist at the same points as the "material" entities which form the executive order of the world. But why are these immaterial entities not discovered out there by science? Why does only one perceiver, possessed of one particular kind of sense-mechanism, perceive one of these innumerable *qualia*, another another, *etc.*? World stuff seems multiplied *præter necessitatem*. And such a view makes sharply against common sense, which views objects as having just one definite shape, size, color, *etc.* The world becomes blurred into an indistinguishable welter of qualities. All the illusory and hallucinatory qualities of objects are as truly "out there" as their "real" qualities!

[6] *E. g.*, "Brief Studies in Realism," this JOURNAL, Vol. VIII., p. 393.
[7] This JOURNAL, Vol. IX., p. 149.
[8] *The New Realism*, p. 369.
[9] *Philosophical Review*, Vol. XXI., p. 152.

Holt has been here, as generally, the most radical departer from common sense. He insists[10] that the world is chock-full of contradictions: "every case of collision, interference, acceleration and retardation, youth and decay, equilibrium, *etc., etc.,* is an instance."[11] But such opposition of forces or laws is not really a case of contradiction; these laws or forces are really but *tendencies,* which are not *actualized* simultaneously. This is a very different matter from the compresence at one point of contradictory qualities, which he seems to think becomes thereby plausible.

Unless, then, some happier argument can be adduced, most of us will agree with Montague's "axiom of uniplicity," and share his belief that the multifold-quality view (which is the inevitable corollary of a strict E. M.) "will ruin the realistic movement if it is not repudiated. Any one place at any one time must contain but one non-contradictory set of qualities. Such a set of qualities is what we mean by an object, and its occupancy of one space at one time is what we mean by its existence."[12]

II. *There is no apparent mechanism for the projection of sense-qualities into objects.* Whether or not it is *conceivable* that all the size-qualities, shape-qualities, color-qualities, *etc.,* that exist in the experience of the various observers when they simultaneously "perceive the same object" should really exist "out there" where the object is, there seems to be no way for them to *get* out there. These sense-qualities are admittedly functions of the organism; what they are to be must await for decision the nature of that organism. The mechanism of perception is, however, a one-way mechanism. It brings us influences from objects, but it includes no mechanism of reprojection of the qualities caused by it back into the objects. Perception is not an outreaching process, like a searchlight resting now on this object, now on that. It is simply a series of causes and effects: an event in the object produces a pulse of radiation, that produces an event in a sense-organ, that a nerve pulse, that a brain-motion. The sense-quality exists in our experience either exactly or nearly exactly at the instant of this brain-motion, upon whose nature *its nature* depends. By what mechanism should the sense-quality arise *in the object* at this precise instant? Is it not easier to suppose that perception is in reality no such boomerang; that in attributing our sense-qualities to the outer objects from which the influence comes we are victims of a universal illusion, and that the qualities we seem to see in the objects are really the impressions they make on us?

III. *Our sense-qualities exist at a time later than that of the*

[10] *The New Realism,* pp. 360 ff., *The Concept of Consciousness,* Ch. XIII.
[11] *The New Realism,* p. 364.
[12] *Philosophical Review,* Vol. XXIII., p. 55.

events in the objects that cause them. This "time-difficulty" of naïve realism produces, as we all know, in certain cases the significant result that the object has utterly ceased to exist at the moment when the sense-quality exists in our experience, and in other cases the equally significant result that our sense-qualities exist in our experience in a time-order different from that of the events in the outer object. The impossibility that a sense-quality existing *now* in my experience should be numerically identical with any aspect of an object which no longer exists is so obvious that the argument needs no emphasis. Various naïve realists, however, have sought to evade the difficulty in some such manner as this: "Why, pray, would perception be any the less perception if we acknowledged that it is a relation to the past? Only because of the very assumption which is here in question, namely, that the *presence* of the object is equivalent to its temporal *presentness*. . . . If we tenaciously hold to the point that it is the *hearing,* not an objective-content-heard, which is *now,* the time-discrepancy vanishes."[13]

Such an analysis of the situation seems inadequate. It is not merely the act of perception which exists *now*; the sense-quality exists now. Only the implications of a theory "tenaciously held" can blind any one to that. It is the surest of all facts, the datum upon which all theories must build.

We may, indeed, agree that perception, like memory, is "a relation to the past." And when we think *about,* or *remember,* an object not now temporally present, we may, if we like, speak of the *presence* of that object to consciousness. But that really means, we insist, that our temporally present thought, or memory stuff, *refers to, represents,* a not actually present object. The case of perception is in this wise similar: there are temporally present in our experience—existing, undeniably, *now*—what we are calling sense-qualities. If these *qualia* are numerically identical with *qualia* existing in the *object,* or forming part of it, then it follows that these aspects of the object have not only "presence," but "presentness" in our experience. If, on the other hand, E. D. is true, the sense-qualities have "presentness," while the qualities of the *object* have "presence," in the sense that the object thought *of* or *remembered* has presence. It may be said to be *perceived,* just as the object in the other case may be *remembered;* but in both cases it is really *represented* by the *qualia* (sense-qualities or memory-stuff) now present. But at any rate, whether this view is correct or not, the time-difficulty remains a flat disproof of E. M. If as realists we believe in a time-space order where every *quale* that is ever to exist has a definite position, from which it never budges, it follows that a *quale* now temporarily

[13] B. Ewer, this JOURNAL, Vol. VI., p. 147.

present in my field of consciousness can not be numerically identical with a *quale* which formed an aspect of an object that no longer exists.

As in the case of the other arguments against E. M., the point of this argument is constantly missed by contemporary writers. Holt, for example,[14] quotes disdainfully the following excerpt from an earlier article of mine: "The 'real' object always exists earlier in time than the perceived object, which we hastily assume to be the 'real' object, yet which is really but an element in our own experience and not the object, or eject, which exists in and for itself."[15] I had put the word "real" in quotation marks in order to remind the reader that the adjective was not of my choosing. The terms "real object" and "perceived object" were recommended by the committee of the American Philosophical Association to designate what I prefer to call the "object out there" and the "sense-quality," because, as I used to insist, the one is just as *real* as the other, and both belong, as I believe, to a single realistic world-order. The point of my sentence, then, as the context made clear, was exactly that which I have here been making—the numerical duplicity between the two *qualia* which E. M. identifies. But Holt's comment is as follows: "Succinctly stated, the astonishing argument is that the mental image is not a part of the real world, but is distinctly non-physical and non-real, and belongs intrinsically to another, the subjective order of being, because it lags in time behind the real order of things: and this is urged notwithstanding the fact that every case of image which can be cited from the strictly physical world lags in exactly the same way behind its real physical prototype."

This reply not only misses the point of the argument, but seems really to concede the case. It is admitted that every image lags behind its "prototype." Surely, then, the image is a different entity from the "prototype." Just so is the sense-quality a different entity from *its* prototype. If the assertion is made that both are but parts of *one object,* the reply is obvious that they are not the *same* part. Calling the whole process "one object" is only a verbal E. M. That part of the object which is the sense-quality exists at a later time, is numerically different from, and representative of, that part of the object which existed "out there"—the source of the radiation. But this is E. D.

There are other good arguments against E. M. But these are good enough. Surely the wedding of realism with this lady must not proceed until these objections are satisfactorily met. Many of us believe that they never can be satisfactorily met; that, in fact, E. M.

[14] *The New Realism,* p. 307.

[15] This JOURNAL, Vol. VIII., p. 371.

is a mistaken theory. If the objections to E. D. seem insuperable, the honest course would seem to be to commit ourselves to neither, but to keep our minds open for the present. The cocksureness, therefore, of the realists who hold to E. M. seems ill-advised. If they choose to exercise their will to believe in the face of such weighty arguments, they should at least be less impatient of those who espouse E. D.

It seems as if these realists had first decided that E. M. must be true, and then set to work as best they could to answer the objections to it. It is easy for them to do this, since E. M. is the natural human view—until one examines the situation carefully. But the natural view is by no means the correct view—as was shown, for example, when Copernicus upset man's natural way of thinking in another matter. E. D. requires just such a mental wrench; but it may none the less be the correct account. Hence it is not enough to start with the assumption that E. M. is true, and then, when the objections to it are offered, to declare that these aspects of the matter are a mystery, that they remain to be cleared up in the future. Until they are cleared up, E. M. can not pose as the correct view. We must indeed listen with open ears to any new defense offered in its behalf. We may even legitimately cherish the belief that it will turn out, after all, to be the correct view. But at present the suspicion seems well founded that this particular form of realism leads into a *cul-de-sac*; there is here no thoroughfare. My own belief is that the insistence on epistemological monism on the part of some of the most conspicuous leaders in the neo-realistic movement is the greatest obstacle in the way of the spread of a sound realistic philosophy.

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COMMENT ON PROFESSOR BROWN'S "MATTER AND ENERGY"

IN his paper on "Matter and Energy," recently published in this JOURNAL, Professor H. C. Brown has given an excellent example of sound metaphysical analysis in sharp contrast to what he calls "sentimental" philosophy. His conclusions are worth repeating:

"Our answer to the question raised above (p. 59) is now obvious. Atoms, electrons, and the like can not be unreal or they would not possess the value necessary to fulfil their function in a body of scientific knowledge. They are not mere symbols, nor are they independently existing elements brought together to constitute a whole of reality. They are simply phases of physical existence that have exceptional value from the fact that through centering attention on them it is possible to state some process in lawful fashion.

"Perhaps the most pernicious error in philosophic thinking, and even in the thought of many scientists, is that separation of matter and energy, which while justifiable in the sense that we can distinguish the shape of an object from its color, and insist that one is not the other, is wholly illegitimate, if we try to think as if the color and the shape are independent realities brought together in the particular object, instead of analytically derived aspects that have quite different practical values when it is a question of dealing with objects. If scientists have talked about 'energy atoms,' it is merely because the kind of contact we have with certain phenomena makes it impossible for us to find the 'term character' in the source from which changes spread and so the resultant energy factors constitute the sole datum, and it becomes possible to beguile ourselves with the belief that here we have a genuine disembodied energy.

"The scientists' world is the real world, but with a qualification. It is a selected real world according to those aspects which are significant for a certain purpose. Unlike the artist, whose aim is expression, the scientist can not introduce what is not really there into a certain context, but he can preserve in that context only what is fruitful for a certain purpose. He is ever under the pressure of the need of prediction. The map-maker would certainly be wrong if his map did not denote realities, but he would just as certainly be absurd if, because he charted his territory in terms of rivers, mountains, valleys, and plains, he should assert that there was nothing else of which the landscape is made up. There is no such a thing as an atom in just the sense that there is no such thing as a river, *i. e.*, they are not found out of integral relation to other realities."[1]

Put in general terms, these conclusions seem to be: (1) that the distinctions discovered by analysis which are relevant to the comprehension or execution of any operation are not arbitrary, but are determined by the character of the situation and operation which are analyzed; (2) that such distinctions, however, are not absolutely discrete existences out of which the continuity of existence is composed; and (3) that conclusions (1) and (2) are not contradictory.

These conclusions appear to me to be solid and satisfactory. Yet I think that I detect in Professor Brown's exposition of them an attitude of mind which is reminiscent of profitless philosophical controversies, and which tends to confuse their simplicity. In this I may be mistaken, for the comments I have to make may indicate only that I have drawn from Professor Brown's words implications which, he might claim, they do not necessarily warrant. If that is the case, my comments do not touch his ideas. They leave them untouched in their metaphysical significance.

[1] This JOURNAL, Vol. XIV., pp. 64–65.

When he speaks of the aspects of things derived by analysis as having "quite different practical values when it is a question of dealing with objects," I stumble over the adjective "practical." Why does it appear in this context and why is it suggested elsewhere in the discussion? Precisely what distinction does it intend? The whole discussion, as I understand it, drives home the point that the values discovered by analysis are precisely what they are discovered to be, and this simple fact does not warrant the conclusion either that these values must also be discovered in a different situation, or that there are values which can be discovered independent of or out of any situation and so be regarded as absolute constituents which are somehow independently combined. Indeed, I take it that one of the chief merits of the paper is the demonstration that this latter conclusion is unintelligible when tested by any instance of an analysis actually performed. The physicist, for instance, finds atoms when and where he finds them, and he finds them rather than something else because they and not something else are the values really discovered in the situation he is analyzing. Furthermore, he does not find them as wholly isolated and independent things which can be defined irrespective of the situation in which they are discovered, or be regarded as the constitutive elements of the continuity of the physical world. But why, then, call their values "practical"? Why is any adjective necessary to describe them? And if an adjective is desirable, why not call them "discovered" or "real" or "relevant"?

Now in the atmosphere of philosophical controversy, the adjective "practical" does not connote "real" or "discovered." It implies an attitude of mind toward metaphysical conclusions which impairs their metaphysical status. It seems to me to imply that these conclusions are not final, but need revision in terms of an antecedent metaphysics of knowledge; and that this antecedent metaphysics is a kind of universal metaphysics which colors all conclusions in all departments of knowing. Its thesis seems to be that all values whatsoever are "practical," and this thesis seems to rob the adjective "practical" of all meaning. Delete the adjective from the quotation I have cited, and the question which we naturally ask is simply, "Have these values as a matter of fact been discovered?" Retain the adjective, and the implication appears to be neither that these values are discovered only when an effort is made to discover them, nor that we can discover another set of values the contrast with which will afford us greater illumination. It appears rather to be that all distinctions in the subject-matter of knowledge are relevant to the fact of knowing and not to the subject-matter itself.

I can understand how such a metaphysics of knowledge has been historically and even analytically motived, but I can not render it

intelligible to myself. The distinction between thinking and subject-matter is, no doubt, a practical distinction in the sense that practical consequences flow from the exercise of thought, and also in the sense that thinking is an aid to practise. The attempt, however, to construe the distinction as generated by thinking for practical purposes is both futile and unintelligible. For all thinking, as I see it, goes on in a situation wherein the distinction between thinking and subject-matter is ready-made.[2] With this distinction ready-made, I can understand how we should seek to find in the subject-matter of thinking distinctions and values relevant to our needs and purposes, and how we could call these distinctions and values practical in the sense that they are thus relevant. But I find myself at a loss when these obvious matters are so construed that they seem to imply that these distinctions and values are what they are because they are practical. I should suppose that their practicality was a consequence of their nature, but not its cause. Now if the statement I have quoted from Professor Brown's paper means that the aspects of things derived by analysis have different consequences or efficacies in different situations, that statement appears to me to be evident and sound. If, however, it means that these aspects are what they are because they are "practical," the statement is to me unintelligible and implies an unintelligible metaphysics of knowing.

Professor Brown says also: "Resting-points in analysis are determined by the needs of human action, and what we are satisfied to call elements depend on the nature of reality as limiting and making possible our activities" (p. 63). This statement suggests a comment like that already made on the former quotation. It is evident that, if we did not act, we should never discover resting-points in analysis nor how reality limits and makes possible our activities. But why is it important or illuminating to say so? What is the implication of emphasis on a proposition which it would be trivial to dispute? Again, in the atmosphere of philosophical controversy, the emphasis seems to me to imply not questions about precisely what resting-points in analysis have really been discovered, nor precisely how the nature of reality limits and makes possible our activities, but questions about the nature of knowing which, when answered, lead us to restate the results of analysis in terms of a metaphysics of knowledge. The quotation is confusing. But I will not dwell further on that aspect of it, because I have cited it for another reason.

As I have said, the quotation is confusing. But strip it of its

[2] Since we do not think always, I would not imply that inquiries into the causes which excite thinking are futile. When thinking is excited, practical consequences follow upon its exercise, but these consequences do not, to my mind, indicate that practical needs are the causes of thought.

confusion, and then its correctness may be challenged. In other words, let "human action" imply action which is not human, and "our" activities imply activities which are not ours, then the statement made in the quotation is evidently incorrect. For while certain resting-points in analysis may be determined by the needs of human action, not all are so determined. Those with which Professor Brown deals are not. They are determined by a kind of action the "need" of which, if we may speak that way, is characteristic of countless other things besides man. The proviso must be kept in mind, however, that the quotation is stripped of confusion. The need of physical science is, naturally, a human need, but physical science has, obviously, a wider applicability than to human needs, and discovers how the nature of reality limits and makes possible other activities besides our own. The same is true of science generally, for the sciences generally, even including those that deal specifically with man, discover the nature of reality as limiting and making possible all sorts of activities of which "ours" are but one kind. Professor Brown says that the scientists' world is "a selected real world." This is profoundly true, is, indeed, to my mind, both in the form of its expression and in its implications, one of the most significant things in the paper, for it declares that a "real" world defined without reference to some selective process is unintelligible. But it is not simply because scientists or "we" select, that values can be selected and distinguished. They are selected and distinguished by other means also. For surely a plant selects and distinguishes its nourishment and a river cuts out its channel.[3] All this is so obvious that it seems unnecessary to state it. I have thought it worth while to state it, however, because the quotation made at the beginning of this paragraph seems to be confusing and incorrect. It promotes controversy rather than knowledge.

I have made these comments not with any desire to impair the beauty and cogency of Professor Brown's paper, but in the interest of sound metaphysical analysis of which the paper affords, to my mind, so striking an example. Such analyses have been seriously impeded by the tendency among so many of modern philosophers to think that an analysis of the fact of knowing makes it necessary to revise the results of analysis generally in terms of the process by which these results are attained. The earlier outcome of this habit of mind was

[3] In this connection, I should say that the final paragraph of Professor Brown's paper, which I have not quoted here, is somewhat puzzling. Surely the "organism transparent to solids," even if fanciful, is, for purposes of exposition, not unlike a plant or a river or an atom. We could understand its map and it could understand ours, not simply because we select and it selects, but because both of us are in the same world, which is always a "selected real world."

to make thinking a purely theoretical activity which does not vitally cooperate with other activities in the business of successful and happy living, but which is an activity apart, and one which judges according to its own categories the subject-matter with which it deals. The real world became, so far as it is to be described as of any particular sort, a world which is ultimately to be described as a "*known* real world." In other words the metaphysical question about the nature of the world received the answer: "Its nature is to be an object of knowledge." The important topic of inquiry then became: "How is an object constituted as an object of knowledge?" Metaphysics was entirely absorbed in a metaphysics of knowing. Nearly all living philosophers over the age of forty were educated under the controlling influence of a metaphysics of this kind.

Not all of them, however, were so educated with docility. The fact that thinking is also practical, a real instrument for successful living, was too obvious to be overlooked by them. Then, too, the general intellectual atmosphere had changed. Whereas the older generation did its speculating when the sciences of mathematics and mechanics furnished the basal ideas for nearly all philosophizing, and encouraged the habit of thinking of the world in spatial terms as one completed and self-contained object of thought, the newer generation was under the influence of biological, Darwinian, and historical ideas. These ideas were not favorable to an absolute and simultaneous grasp of things by the mind. They forbade the view that the world is essentially an object of knowledge, and encouraged the view that it is a domain of process, readjustment, and adaptation, wherein thinking is one of a number of activities all of which may be involved in the going on of process, readjustment, and adaptation. A vigorous philosophical reaction was the result. All that is distinctive, valuable, and promising in current philosophy is—I think it may justly be said—largely the outcome of this reaction.

But this reaction has been largely negative. The relative infrequency of pieces of constructive work like Professor Brown's is a noteworthy feature of the philosophical literature of the past twenty-five years. Most of the writing produced by the reaction has been in the interest of promoting what Professor Bush has happily called the "emancipation of intelligence," and in furthering habits of direct and experimental inquiry. Constructive work has been distinctive almost exclusively in other fields than metaphysics—education, ethics, and logic, for instance. There are reasons enough for this change of interest, reasons to be found in social and economic conditions; but the neglect of metaphysics is in part to be explained also by the confusion incident to the philosophical reaction. Metaphysical ques-

tions have rarely been approached with the directness which real intellectual emancipation warranted. They have been approached rather by first substituting for the proposition, "Thinking is theoretical," the proposition, "Thinking is practical," and then proceeding to view the world as the object of thought's practical activity, and to construe the results of analysis as determinations of thinking as practical, in much the same way as these results had formerly been construed as determinations of thinking as theoretical. Is there, for instance, much difference between the assertion that to be an object means to be thought of in ways determined by the need of thinking consistently, and the assertion that to be an object means to be selected in ways determined by the need of solving practical problems; or between the assertion that the concepts of science are derived from the ultimate categories of judgment, and the assertion that they are conventions adopted for reasons of practical economy; or the assertion that the truth of an idea consists of that idea's congruence with the rest of ideas, and the assertion that it consists of the practical consequences of the idea? The latter assertions, although they indicate a changed and stimulating point of view, do not, to my mind, indicate that the older intellectual habit in metaphysics has been really abandoned, the habit, namely, of restating the results of analysis in terms of the process by which these results are reached. The persistence of this habit is, I believe, the principal cause of the confusion which has characterized so much of recent philosophical discussion.

That there is no need to restate the results of analysis in this fashion, and that it is not really intelligible to do so, Professor Brown's paper, to my mind, abundantly demonstrates. These results are not changed by a consideration of the fact of knowing. They are changed only by further analysis of the subject-matter to which they are relevant. In short, if we really regard thinking as a genuine instrument of discovery and adaptation, we have abandoned that futile type of metaphysics which makes a theory of knowledge fundamental to all other theory, whether thinking is regarded as essentially theoretical or essentially practical. Then intelligence has been really emancipated. Then we are in a position to address ourselves to metaphysical analysis with that directness, immediacy, and confidence which, when seen in others, is wont to stir the envy of philosophers.

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CONCERNING PROFESSOR WOODBRIDGE'S "COMMENT"

IN reviewing Professor Woodbridge's generous criticisms of my paper on "Matter and Energy," it is dawning upon me that a sort of esthetic attraction that I feel for the word "practical" has led me to use this word freely, here and elsewhere, in a sense close to its derivative meaning, and that I have completely overlooked the difficulties it might have for one who, like Professor Woodbridge, sees it in the light of its rôle in epistemological controversy. Thus with respect to his first quotation (pp. 373–4) if "practical" merely means, as I intend, "related to acting," it could only be applied to values if they were "discovered," "real" *and* "relevant." I am not sure, however, but what I agree with him that it would be well to omit the adjective in this instance.

I am not so sure, however, about the following sentence: "It appears rather to be that all distinctions in the subject-matter of knowledge are relevant to the fact of knowing and not to the subject-matter itself" (p. 375). They are relevant, I believe, to the kind of interaction that takes place between the knower, an organism, and the known, the physical world. Perhaps this is the same thing as "the fact of knowing," but I feel an epistemological shadow on this latter phrase that gives me pause. I was interested in emphasizing this situation in which knowing takes place and the contribution of all its actual factors to the resulting knowledge.

The difficulty seems to have carried over in Professor Woodbridge's mind to his next quotation (p. 376). I confess the second paragraph of his criticism puzzles me. I asserted that "resting-points in analysis are determined by the needs of human action. . . ." He comments that "not all are so determined" (p. 377). Perhaps I should have been more explicit. The "resting-points of analysis" mean to me here "the objects denoted by our scientific conceptions" and I was trying to say that any particular selection of such objects in our sciences results from the nature of the physical world and the human organism. I do not approve my own use of the word "need" here and should like to substitute "conditions." I see no objection to the word "human" for it is the sciences we have that I am interested in.

And this is closely related to the difficulty that Professor Woodbridge finds with the end of my paper (note 3). I never intended to imply that it is "simply because scientists or 'we' select, that values can be selected and distinguished." I agree perfectly with him that "they are selected and distinguished by other means also," and should have no objection to his instances of the plant or the river. But for the purposes of this paper, I was interested in certain specific selections that lie at the basis of a special science. I did mean,

however, by my example of the organism transparent to solids that although it is the same world that is mapped or from which selections are made, the mapping or the selecting could be made from such different points of view that, to differently constituted organisms, one selection might be of value and the other not. The plant and the river are in the same world, but if each had a science that mapped that world from the point of view implied by its activities, I think it might be a little difficult, although it is not inconceivable, for each to understand the other's map.

I do not believe that Professor Woodbridge will be in any deep disagreement with these explanations and my only reason for supplementing his remarks is that it is a question of making clear a certain type of metaphysical analysis in which we both believe profoundly, whether or not we shall be able to bring our conclusions together now or in the future.

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ON THE FUNCTION OF VISUAL IMAGERY AND ITS MEASUREMENT FROM INDIVIDUAL REPORTS

SOME years ago in this JOURNAL I presented evidence that individuals who reported themselves as capable of calling up clear and vivid imagery or objects did not differ appreciably in the accuracy of their judgments of numbers or magnitudes from memory, from individuals reporting little or no power to call up clear and vivid images.

It is of some interest to know whether the same holds good when the judgments are of *relative* magnitude or proportion; and I have recently secured data on this point, by the following method: Students of Teachers College and Barnard College who had estimated their imagery of their breakfast-tables and of an often-seen face were requested to tell what per cent. the length of Schermerhorn Hall is of the total 120th-Street width of the Columbia University campus. The question was made entirely clear, and the students were encouraged to imagine themselves as standing on 120th Street facing the campus, and to picture the building in question as it stands so as to be able to see how much of the campus's width its length took up in their visual image of it.

The results for the 115 reported "best" visualizers and the 122 reported worst visualizers, representing roughly the top and bottom thirds as reported, were as follows:

FREQUENCY OF EACH DEGREE OF ERROR

Error	The Best Visualizers as per Report	The Worst Visualizers as per Report
0	1	1
1	1	1
2	33	26
3	1	8
4	0	1
5	1	2
6	14	7
7	28	23
8	1	1
9	2	3
10	0	6
Over 10	33	43

There is thus only a very slight advantage in favor of the top third in visualization. Also it is possible that the nature of the instructions, which emphasized the use of the image as a basis of judgment, may have been to the disadvantage of those who could summon no clear or stable image of the campus front containing the building. Had the question been put without any suggestion as to picturing the facts in the mind's eye, even the small apparent advantage to the good visualizers might have been absent.

It is also of interest to discover whether small details and relative positions in space are kept in brief memory better by alleged good visualizers. Betts found little or no advantage. The experiment to be reported here concerns the speed and accuracy of mental multiplication of a three-place by a two-place number, four such examples being done, in response to the following instructions:

Record a time in minutes and seconds at which you will start to multiply mentally in the examples below. Cover them until that time. Then uncover them and multiply *mentally,* writing down *nothing* whatever until you have the *entire answer.* That is, you must keep the partial products in memory and add them from memory, doing all the work for an example mentally till you have the entire answer. Then write it down. Then start at once with the second example, doing it in precisely the same manner; and then the third and fourth. When the answer to the fourth is obtained and written, record the time.

246	729	379	647
93	68	82	79

Classifying the individuals according to their reports of the clearness and vividness of their images of breakfast-table and often-seen face as before, we have the following results:

For the best visualizers (those reporting themselves as 1, 1, or 1, 2, or 2, 1, or 2, 2, or 1, 3, or 3, 1 in visual imagery), a median time of 480 seconds with 5 as the median number of mistakes.

For the worst visualizers (those reporting themselves as 4, 4 or 3, 5 or 5, 3 . . . to 7, 7 in visual imagery), a median time of 500 seconds with 6 as the median number of errors.

In so far as it is desirable to define and measure reported powers of visualization it is useful to know how many often-seen objects a person should report on in order that his report may give substantially as good information as his report on an infinitely long list of such objects. I have made the necessary computations to determine this on the basis of the responses of 368 college students to the following instructions:

Consider your own visual image of your breakfast-table and of the face of some one you know well. Rank yourself on a scale from 1 to 7 for the clearness and fidelity (that is, perfectness of representation of the thing imaged), of your visual images in these cases, letting 1 mean that the pictures in your mind's eye are as clear as the things themselves and are absolutely faithful copies. Let 7 mean that you can get no mental pictures of the things at all.

Let 2, 3, 4, 5, and 6 be degrees of clearness and fidelity that are between 1 and 7, 4 being half-way between 1 and 7, and the differences between 1 and 2, 2 and 3, 3 and 4, 4 and 5, 5 and 6, and 6 and 7 being equal.

The correlation table resulting is as shown below. The coefficient

CORRELATION BETWEEN REPORTED VISUAL IMAGERY OF THE BREAKFAST-TABLE AND REPORTED VISUAL IMAGERY OF A FAMILIAR FACE

Familiar Face ↓ / Breakfast-Table →	1	2	3	4	5	6	7	
1	44	43	12	1				100
2	18	42	38	10	3		1	112
3	7	16	18	13	5			59
4	2	7	8	6	5	7		36
5	2	3	6	13	2	5	1	32
6			2	4	8	6		20
7				1	1	6	1	9
	73	111	84	48	25	24	3	

by the Spearman foot rule transmuted into terms of a Pearson coefficient is .7. By applying the formula of Brown,

$$r_n = \frac{nr_1}{1 + (n - 1)r_1},$$

it is found that reports on ten objects will give practically as good a result as an infinite number of reports (r being .96 for the result from one set of such ten with another set of ten).

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REVIEWS AND ABSTRACTS OF LITERATURE

Democracy and Education. JOHN DEWEY. New York: The Macmillan Company. Pp. xii + 434.

Ever since the hunting, that Plato said all philosophizing is, began, there have been two opinions as to its value. Though it has been the chosen pursuit of a few, a part of mankind, and never a small part, has persisted in regarding it as useless wordiness. But a far more serious misfortune which has attended it almost from the first has been the contrariety of opinion which has obtained among the hunters themselves as to what it is they are hunting. Socrates and Plato had a consistent programme; knowledge was all of one kind to them. They were hunting for a way to live, not merely a way to think. Knowledge therefore took on a fateful significance to them. Without it one could not cultivate the olive, or steer a ship, or examine his own life, or bring up his children, or serve the commonwealth. But when Aristotle came with his confusion-breeding distinction between knowing for the sake of knowing and knowing for the sake of doing, he set theory against practise and took away strength and dignity from both knowing and doing.

Since that unfortunate time philosophy has for the most part been a subject-matter of great abstractness, professing to be concerned with the ultimate nature of reality, whatever that may mean, rather than a hunting down of the difficulties of our common life and a persistent effort to find ways of dealing with them. Its search for knowledge wholly unmixed with volition has made, of what was in its beginning a very human enterprise, an exceedingly elaborate technique of distinctions, the manipulation of which, having virtue in itself, is generally regarded as the exclusive function of a specialized fraternity. The vaunted intellectual knowledge to which they

devote themselves provides the absorption of a captivating game, but does not bear the fruit of human helpfulness which we have a right to expect. Theoretical knowledge without practical knowledge is empty. Either philosophy must bake bread or it can not give us God, freedom, and immortality.

As soon as one begins to put this noble art of asking and answering questions to human uses the whole situation changes. Its problems lose their passivity, and become live things which powerfully resist the manhandling of arbitrary treatment, and point out their own solutions. There is no branch of human endeavor which so completely integrates all forms of human striving as the education of the young. There is no approach to reflection so potent as that which the theory of education involves. Philosophy grew up as an effort to comprehend the requirements of educational procedure. The greatest masterpiece in its literature is Plato's matchless work on education. If philosophic issues make and can make no difference in educational procedure, it is evident that they can make no difference anywhere else in life. If education, on the other hand, can go on just as well without philosophy as with it, it is evident that it is indeed the unexamined life which Socrates declared was not fit to be lived by any man.

"The educational point of view," writes Professor Dewey, "enables one to envisage the philosophic problems where they arise and thrive, where they are at home and where acceptance or rejection makes a difference in practise. . . . Education is the laboratory in which philosophic distinctions become concrete and are tested. . . . The most penetrating definition of philosophy which can be given is, then, that it is the theory of education in its most general phases."

If philosophy is *for* anything, if it is not a kind of mumbling in the dark—a form of "busy work" which otherwise unoccupied adults mark time with—it must shed some light upon the path, must help to make purposes more articulate and their realization more likely. Life without it must be a different sort of thing from life with it. And the difference which it makes must be in us. It can not be a debt of honor which we blindly pay to objective reality—a tribute which things exact from us. It must be a service which we attempt to render to ourselves. It grew out of defeated human purposes. It exists to redeem action. "Philosophic thinking has for its differentia the fact that the uncertainties with which it deals are found in widespread social conditions and aims, consisting in a conflict of organized interests and institutional claims. Since the only way of bringing about a harmonious readjustment of the opposed tendencies is through a modification of emotional and intellectual disposition, philosophy is at once an explicit formulation of the

various interests of life and a propounding of points of view and methods by which a better balance of interests may be effected. Since education is the process through which the needed transformation may be accomplished and not remain a mere hypothesis as to what is desirable, we reach a justification of the statement that philosophy is the theory of education as a deliberately conducted practise."

Philosophy, then, is reflection upon social ideals, and education is the effort to actualize them in human behavior. They go hand in hand. There is no philosophy which is not philosophy of education, and no genuine education which is not the product of philosophy. Clearly this is a point of view as fruitful to philosophy as it is to education. Certain changes have taken place in social life which Professor Dewey believes call urgently for a reconsideration of the basic ideas of traditional philosophic systems and a corresponding reconstruction of educational practise. The most significant of these changes in social life are due to the advance of science, the industrial revolution, and the development of democracy. Such practical changes necessitate new formulations of the relation of mind and body, theory and practise, man and nature, the individual and social, *etc.*, and powerfully affect our notions about human nature and the ways in which it should learn to deport itself in order to live well.

A critic of this book has complained that "in the Deweyan social system there is no room for any individual who wishes to lead his own life in the privacy of reflective self-consciousness." That is true. There is no room for such an individual because there is no such individual. An individual who strictly leads his own life in the privacy of his reflective self-consciousness would have to be an individual who did not vary with his environment. A being who gives and takes with other beings has a social environment. His giving and taking may be little or much, but the activity of other beings produced him, and the activity of other beings allows him to live. Wherever he is he must either learn to fit in or teach others to fit in. It is only when society is conceived as a ready-made reality set over against individuals, and spelled with a capital "S" that the relation of the individual to his group becomes difficult to comprehend. If society is a hypermetaphysical entity, like the realistic conception of the German state, a something to which we belong, but which does not belong to us, neither it nor the demands which it makes upon men nor the education which it requires can be comprehended. But then why create such an idol?

This world in which we live is made up of individuals working together. They are born at different times. There is a telescoping of the generations. If individuals came ready made at birth there would be no such thing as philosophy or science or literature or art

or politics or religion or education, and if our elders had discovered all that there is to be discovered about existence here and left no unfinished business for us to carry on, philsophy and science and literature and art and politics and religion and education would be very different things from what they are. Life in the first case would be a predetermined unchanging thing, and in the second case it would require of us only that we learn to do as our ancestors had done. Transmission of experience would be required and an education like that of Sparta or of early Rome would be necessary. That is, whenever we think of interrelated beings so made that they may choose the way of life which they will take, we have a group whose very existence depends upon bringing up its young to the way of life which the elders have chosen. Such a group need not be intentionally progressive, but if it is not, the programme of existence which it strives to repeat from day to day and generation to generation meets resistance, both in ever-changing external environment and in the dynamic nature of the young. We are prone to believe that if the right way to think about things and men could only once be found and the proper human adjustments once be made the race might live happily ever after; but that is a delusion. It leaves out of account the infinite diversity of constitutions—capacities and points of view as well as the varied play of stimuli to which individuals must respond. There is a democracy more fundamental than that of government. It is this democracy of experience. Social organization means the utilization of these contributing individual capacities and points of view. In proportion as a society makes provisions for them in the continuing revaluation of its common life on the part of its individual members it frees them for social growth and becomes truly democratic. In viewing society as the associated interworking of human beings who reach and pursue common purposes because of freely shared experiences, I can not but feel that Professor Dewey has given the world that ideal picture of the aspiration of democracy which it has long wanted to hang beside Plato's vision of "the best state."

Society then is the conjoint, cooperative, associated doing of individuals. It never is, but is always becoming, but its component parts make their to-days and to-morrows out of their yesterdays. "The development within the young of the attitudes and dispositions necessary to the continuous and progressive life of a society can not take place by direct conveyance of beliefs, emotions, and knowledge." Each individual must determine his own beliefs, feel his own emotions, and generate his own knowledge. All that society can do is to surround the young with necessities for performing their own giving and taking in socially approved ways. Three of the more impor-

tant functions of the special environment which it creates for this purpose, which we call the school, are: "simplifying and ordering the factors of the disposition it is wished to develop; purifying and idealizing the existing social customs; creating a wider and better balanced environment than that by which the young would be likely, if left to themselves, to be influenced." The aim of education is to enable the individual to continue this education, *i. e.*, to make his own growth a conscious process on the part of each individual so that he will continue it as long as he lives.

There are certain theories of education which are opposed to this one and which must be rooted out if real education is to flourish. The first of them regards education as preparation for some future difficulty or privilege. But one can prepare to swim next year only by swimming now. The only way to prepare for the future is to utilize present possibilities to the full. The second theory regards education as the unfolding of latent powers, but keeps its eyes upon an assumed final or finished development, disregarding the fact that each stage is as worthy and final as the one which it regards as the last one. A third view defines education as the perfecting of the powers of the mind, but the supposed original faculties of the mind which it attempts to perfect are purely mythological, and a fundamental fallacy lurks in this doctrine that activities and capacities can be separated from subject-matter. The theory of education as formation takes everything educational into account save its essence—the native activities which shape themselves by their own energy. Education for culture is a process of accommodating the future to the past. Professor Dewey states his own definition of education as "that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience."

The fundamental question of philosophy concerns the nature of knowledge, and since education has knowledge for its object the question, what is knowledge, must be settled before its work can begin. To this question there are two answers from which one must choose. One is that knowledge is the description of the things that exist. "Knowledge is a double of that which is." The other is that knowledge is not our awareness of the things that exist; it is our ability to work with them. How much better off would we be with the first kind of knowledge than without it even if we could conceivably have all of it that could possibly be had? The knowledge which we want is skill in working with what exists. "The function of knowledge is to make one experience freely available in other experiences. . . . In other words, knowledge is a perception of those connections of an object which determine its applicability in a given situation. . . .

While the content of knowledge is what *has* happened, what is taken as finished, and hence settled and sure, the *reference* of knowledge is future or prospective. For knowledge furnishes the means of understanding or giving meaning to what is still going on and what is to be done. . . . When knowledge is cut off from use in giving meaning to what is blind and baffling it drops out of consciousness entirely or else becomes an object of esthetic contemplation."

Certain philosophic schools of method "regard knowledge as something complete in itself irrespective of its availability in dealing with what is yet to be. And it is this omission which vitiates them and which makes them stand as sponsors for educational methods which an adequate conception of knowledge condemns. . . . The doctrine of formal discipline in education is the natural counterpart of the scholastic method. . . . 'Reason' is just the ability to bring the subject-matter of prior experience to bear to perceive the significance of the subject-matter of a new experience. . . . The theory of the method of knowing which is advanced in these pages may be termed pragmatic. Its essential feature is to maintain the continuity of knowing with an activity which purposely modifies the environment. It holds that knowledge in its strict sense of something possessed consists of our intellectual resources—of all the habits that render our action intelligent. Only that which has been organized into our disposition so as to enable us to adapt the environment to our needs and to adapt our aims and desires to the situation in which we live is really knowledge."

This is a very different kind of discussion of the philosophy of education from that which the ordinary book on that subject contains. It is not an attempt to fasten time-honored philosophical terms and classifications here and there upon this or that peg of the subject-matter with which education deals. It is entirely free from the woodenness and empty formality of such a proceeding. Professor Dewey has not tried to make a theory of education to fit into a preconceived system of philosophy. He has tried to think out the problems of education. His style is as simple and direct as his method is fruitful. The book represents the reflection of a lifetime. I am convinced that nowhere in any modern literature is there so profound and vitalizing a discussion of the meaning of education as he offers here.

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Fundamental Sources of Efficiency. FLETCHER DURELL. Philadelphia: J. B. Lippincott. 1914. Pp. 350.

The book is intended by the author to provide a few elemental principles upon which efficiency, now so energetically sought, may be

established. These principles are broad enough to serve as a basis both for the details of an individual's work, for teaching in the schools, and for a philosophy of life. Although the writer found his first inspiration in the philosophy of Herbert Spencer, he acknowledges aid from the writings of such students of efficiency as Taylor, Emerson, and Münsterberg.

A large portion of the book is given to the analysis of the concept of efficiency, and a careful definition of terms. An abundance of concrete illustrations is provided in the text to make each point clear, and every chapter is followed by a group of exercises ranging in number from 20 to 75, intended further to test the reader's understanding of principles. In a later chapter, the "efficients" derived from the preceding analysis are combined. Such combination is illustrated thus: "For instance, in the rotation of crops in agriculture we evidently have the use of the principles of diversity, direction, and rhythm. But these result in other efficiency principles, such as the retention and re-use of farm laborers the year round, the greater re-use of farm machinery, utilization of by-products, the prevention of waste, as by the destruction of insect pests, a uniformity of returns, and many other useful results and agencies" (p. 302).

In the last chapter the author offers a "systematic though brief application of the efficiency methods" to specimen departments of human thought and endeavor. The first application is made to the field of psychology, "since all applications to the world as it is must, in the ultimate analysis, be made by persons." This is followed by applications to the departments of education, sociology, business, art ethics, and religion.

Although the book is intended for general reading, as well as for text-book purposes, careful study is required to get its full value. It should furnish to its readers a much needed check upon the tendency toward the indiscriminate application of efficiency methods, and extravagant expectations of results.

A. T. Poffenberger, Jr.

Columbia University.

JOURNALS AND NEW BOOK

JOURNAL OF EXPERIMENTAL PSYCHOLOGY. December, 1916. *Reflex Secretion of the Human Parotid Gland* (pp. 461–493): K. S. Lashley. – Experiments reported form a preliminary survey of the conditions affecting the secretion of the parotid gland. Direct reflexes of this gland are excited by mechanical, chemical, and

protopathic stimulation of the oral mucosa. There is probably no direct reflex to thermal stimuli unless they are of protopathic intensity. The secretion produced when a foreign object is chewed involves a specific reaction to a complex group of stimuli. The presence of food in the stomach excites secretion. Other conclusions are made. *Positive Acceleration in Improvement in a Complex Function* (pp. 494–507) : J. Crosby Chapman. – Measurements were made at weekly intervals of 100 individuals in the typewriting class of a school of commerce. Results selected at random from the group practising for 20–100 hours show initial positive acceleration, whereas for the group practising 75–165 hours, the ordinary type of practise curve, indicating negative acceleration in the improvement, is the general rule. While no claim is made that positive acceleration in improvement, over short periods of time, is universal in adult learning, yet in complex traits it is probably always present to a certain extent and must be considered in framing a psychology of skill. *The Influence of Mental and Physical Work on the Formation of Judgments in Lifted Weight Experiments* (pp. 508–532) : Samuel W. Fernberger. – Intensive mental work for a half hour does not seem to have any influence on the formation of judgments in lifted weight experiments. Very intensive physical work of the muscles utilized in the liftings has a marked and exceedingly great influence on the formation of judgments in lifted weight experiments. *The Trabue Completion Test as Applied to Delinquent Girls* (pp. 533–539) : Alida C. Bowler. – The purposes were (1) to determine whether an individual's graded completion test achievement might be considered indicative, to some extent, of his general mental ability; (2) to obtain a practical, graded series short enough to be completed in 15 or 20 minutes. Children from 13 to 18 were tested by the Yerkes-Bridges Point scale and by the completion test. The coefficient of correlation between the two was .79 with P.E. .0157. An individual's grade completion test achievement is, to some extent, indicative of his general mental ability. *The Effect on Foveal Vision of Bright Surroundings. IV* (pp. 540–566) : Percy W. Cobb. – An investigation of the difference-threshold under various conditions as to brightness of field and surroundings. A method of computation was used which was based on the same assumptions as the classical method of constant stimuli. *Discussion.*

REVUE DE MËTAPHYSIQUE ET DE MORALE. November, 1916. *Pensées.* (pp. 787–807) : Ch. Renouvier. – Miscellaneous paragraphs written during the last year of Renouvier's life (1902–03). *La démonstration géométrique et le raisonnement déductif* (pp. 808–858) : L. Rougier. – The dilemma that if geometry is deductive, it is

tautologous, and if intuitive, it is uncertain, is solved through its possibilities of creating new objects so that "the axioms of geometry define the structure of a group; they do not determine univocally its material." *L'idéalisme de Taine* (pp. 858–878): R. LENOIR. – A presentation of Taine's thought as an independent, consistent metaphysical idealism. *Notes de critique scientifique. De L'abus de l'intuition dans l'enseignement mathématique:* L. COUTURAT. *Questions pratiques. La force du droit:* G. BELOT.

Papillault, G. Science Francaise, Scolastique Allemande. Paris: Librairie Félix Alcan. 1917. Pp. 154. Fr. 2.50.

Pintner, Rudolf and Paterson, Donald G. A Scale of Performance Tests. New York and London: D. Appleton and Company. 1917. Pp. xi + 218 $2.00.

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Worsley, A. Recognition: With an Outline of a Theory of Knowledge. Isleworth, England: A. Worsley. 1916. Pp. 64.

NOTES AND NEWS

THE National Research Council has appointed the following committee on psychology: J. McKeen Cattell, Columbia University; Raymond Dodge, Wesleyan University; Shepherd Ivory Franz, Government Hospital for the Insane; G. Stanley Hall, Clark University; C. E. Seashore, University of Iowa; E. L. Thorndike, Teachers College, Columbia University; John B. Watson, Johns Hopkins University; G. M. Whipple, University of Illinois; R. M. Yerkes, Harvard University, Chairman.

PROFESSOR WILLIAM CHANDLER BAGLEY, director of the school of education of the University of Illinois, has been appointed professor of education in Teachers College, Columbia University.

DR. RAYMOND DODGE, professor of psychology at Wesleyan University, has been appointed to the Ernest Kempton Adams research fellowship at Columbia University.

PROFESSOR R. M. YERKES, of Harvard University, has been appointed professor of psychology and director of the psychological laboratory at the University of Minnesota.

PROFESSOR J. B. PRATT, of Williams College, has been appointed Mark Hopkins Professor of Intellectual and Moral Philosophy at that institution.

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PRIORITY AND PROGRESS

ANTITHESIS lies at the very base of progress and is woven through all its fiber. The unending conflict which this involves would drive us at times away from this fact, but there is no way of avoiding it. It is the constant presence in the same character of love and hate, desire and abhorrence, indolence and activity. Now one is uppermost, now the other. Psychanalytic investigation discovers that while one is operative in conscious life the other lies in the unconscious, where it may be exerting a power which results in some of the strange contradictions which appear in feeling, thought, and action. Therefore psychanalysis has adopted the significant, dynamic term of "ambivalence" in recognition of this state of affairs.

This ambivalence appears upon a large scale in the great divisions of human thought and feeling in their relations with the realities of existence. Religious belief, conduct, daily occupation, the utmost reaches of logical thought, partake of one antithetical phase or the other, or, more closely examined, prove to consist of a compromise between the two.

These two aspects of life are variously denominated. One is designated the empirical carving into reality in order to discover, to reform, to readapt, to make man's life more abundant, his power more extensive and effectual. Its opposite is described as the conservative, rationalistic acceptation and guarding of that already attained and possessed, the safe and secure enjoyment of the same as of a protecting atmosphere in which character and happiness may flourish and grow. It finds its possibilities already given and contained without excursion into the dangerously new and untried.

These are the progressive and regressive sides of life. Because of the pleasurable sense of security and the lack of effort which the latter implies, they are called, respectively, the adult and the infantile attitude toward existence. They represent the practical attitude of dealing with facts and consequences and the attitude of acceding to the appeal of immediate satisfactions. Neither, however, can stand

alone; each has need of the other; each is the fulfilling complement of the other.

This is equally true in the individual life. The same ambivalence produces a never-solved conflict and a continual alternation between the two poles. Here, too, are applied to it the same terms, and in the individual sphere it is even more sharply defined as the expression of the two fundamental instincts, the nutritive or self-preservative and the reproductive or racial. Upon the wholesome friction between these instincts depends that well-balanced, effectual achievement which is true progress.

Such a perfect adjustment is, however, an ideal toward which there is every degree of attainment with fixation points[1] all along the way, which mark the relative capacity of development of each individual aspirant toward success. The regressive finds its service as an inspirational source of endeavor which grants a diffused, but no less real glow of pleasure about the sterner contact with empirical reality. It must lend to the latter meaning and keep it close to human affairs. Yet the regressive or infantile blinds by its attractions and allures by its false security and peace. We forget the continually recurring call of reality to be up and at our work if we will really find life and expend the inexhaustible creative impulse which drives irresistibly onward. We are part and parcel of "creative evolution." We must sweep onward with it or be swirled helpless to one side, cut short in the perfecting of ourselves and in the impressing of ourselves upon reality in the making.

Work once accomplished affords a peculiar phase of this same temptation. The lure of ease and indolence is then supported by a sense of reward achieved, rest earned, the infantile source and character are successfully concealed behind the importance and magnitude—to ourselves at least—of the definite accomplishment which bears actual witness of something done. We forget that we may not, as Jung has so well expressed it, even stop to take pleasure and satisfaction in the work done lest we be caught dreaming, phantasying there, unmindful of the next step higher which must follow if the creative energy, the libido, is to maintain its essential healthy outflow.

[1] By fixation points are meant those certain definite stages in development which manifest themselves in the earliest years of childhood, at which the individual makes its contacts with environment and derives therefrom a special pleasure gratification combined with sense of power. Normally they are periods of growth which prepare for the adult synthesis of directed useful activity, to which they contribute their energy. Since, however, they are largely pleasure-toned and grant the feeling of ego satisfaction, any or all of them may become emphasized at the expense of later complete development, and therefore fixation upon any of these planes and the conduct growing out of it are termed "infantile." The infantile pleasure must never be completely lost.

Society is full of such partially completed lives who have lost sight of the intrinsic nature of the impulse of life whose only "glory is to go on and to be." They have rather been blinded and stopped by the fascination and confusion of the phantasy enjoyment and the rationalizing power of the human mind to justify its course both of action and inaction. The irresistible nature of the creative impulse, however, can not be brooked with impunity and thus rationalization is further called in to explain the inevitable unrest and dissatisfaction which results, and to relegate them to one or another of the plausible, apparently responsible, sources. Attention may be called, in passing, to the curious irony that has chosen "overwork" as one of the most ready and long-suffering of these scapegoats.

A profounder insight into human character and conduct seeks a new evaluation of determining causes and their manifold elaboration through the intricacies of individual and social life. It serves to clear away the obscurity and confusion which lie about these infantile reactions. It discovers the definite points of fixation and the reason for their attraction for the otherwise outgoing libido, while a consideration of them assists in opening the channels afresh to progress. It reveals in a new way, perhaps, that a sense of priority may have a regressive and therefore unproductive meaning, or it may stand as the servant and very inciter of progress.

Analyses of human nature, the province and the definite work of psychanalysis, have revealed certain universal modes of obtaining power, of securing or retaining mastery over one's surroundings. The word retaining points to the infantile character of the modes. They are methods known mostly merely to the unconscious which, it must be remembered, is the receptacle of the past, the infantile of the race and of the individual. Therefore its ways of mastery are those which served in these early periods and are rather the jealous guarding of the sense of power which primitive thought conceived through its belief in magical efficacy, the omnipotence of the thought, the wish. The infantile period was passed under the same belief fostered by the security and care out of which phantasy arose to prolong the infantile pleasure known as the wish. The adult method is another one, that of gripping firmly with reality and forcing it to yield as much as the impulse toward construction, creation, can wrest from it to build into the next moment of becoming.

The infantile methods, however, secured very intense pleasure at the varying periods of development, and these are not easily given up. True, they must be somewhat modified to fit external demands of adulthood in a cultural civilization, and this transformation makes them unrecognizable for what they are. Their hold, nevertheless, is unconsciously none the less strong, and they lie closer to the surface

than society believes. "Scratch the adult and you will find the child" holds in the affairs of men in the outside world as well as in the nervous clinic.

A sense of priority, then, may be an expression of the infantile lurking just below the surface, or it may be a true sense of combat with the real whereby we know we shall progress and by our success reform that reality to a greater or less extent in behalf of human progress. In fact, priority rightfully partakes of both—inspiration from the pleasure side, stimulus of necessity and of endeavor from the reality side.

What, therefore, does the individual do with this sense of priority and what also is society about concerning it? One of the earliest points of infantile pleasure fixation, and therefore one with a strongly affective tone, is that of the anal erotic, concerned with the process of defecation. The importance of this to the child's early seeking of pleasure and discovering it where, in his limited world, he must needs first find it, in his own body, was first realized by Freud in his penetration into the causes of the psychoneuroses. The fact that this is a pleasure source and fixation point of such overweening importance can be appreciated only through a continued study of the survival or revival of this pleasure in psychoneurotic fears, desires, loathings, especially in compulsive actions and various characteristic reactionary traits which reveal their original source; but moreover in the overvaluation given to scatological customs and ceremonials as they are discovered in primitive races or survive in various pastimes and superstitious customs in peasant Europe. It is universally manifest, moreover, in the ever ready anal and fecal allusion of vulgar wit and its part, apparently indispensable, in the production of photo play, where sooner or later before the reel has gone its round an appeal is made to this infantile characteristic of the audience, to be met by a hearty response.

The symptoms of this striving after power in the outer "normal" world are not unlike those of the compulsive neurotic, the phobic, obsessive or psychasthenic of earlier diagnostic schemes. Like the infant, both would hoard that which they possess, that which they have acquired, each in his own way and in his own time. Granted that the man of the world has by his own hard effort amassed a fortune, that he has attained in other realms, has his libido been satisfied with this? Has the end been the attainment or the effort of attainment? Now that possession is his, retention may be his chief pleasure, like that of the child whose sense of mastery lies in this holding on to his sole possession, wrapped up with his sense of individuality and the pleasure he can produce and enhance in its egotistic enjoyment. Or is the wealth, the new invention, the efficient plant, the

written book but the symbol of larger opportunity? Does he realize a wider outlet for the libido which has found through such attainment possibility and necessity for greater effort? Society steps in with its institutions and corporations, its patents and copyrights, which may serve only to feed the infantile pleasure source through self-centered retention and hoarding, feeding pleasurably on one's own acquisitions; or they may constitute, on the other hand, conservative guards for the various forms of achievement until these may be utilized as sources of inspiration and surpassed in further endeavor by the original author or by others.

Another plane in the development of the individual life perhaps forms the most universal fixation stage, and, moreover, contains within its nature an element of externality which is confusingly blended with the egoistic source. The youth Narcissus, leaning over the stream, beheld his own body so beautiful and lovable that he remained fixed in admiration, enamored with the loveliness and charm of the object, which he scarcely recognized as belonging to himself, until he pined away with longing. So with a vast majority of workers and thinkers. Freud, in his separation of the origin of myth from its rationalistic interpretation, recognized in this legend the projection of one phase in development and its hold upon human thought and feeling. Therefore he denominated this stage the narcissistic, and provided a convenient term which comprehensively symbolizes as narcissists a great class of mankind, often those who have achieved in the higher realms. The narcissistic pleasure in the works often of real beauty and value prevents, however, a further true progress. The priority of the authors is drawn unto themselves and loses its intrinsic meaning because it fails in leadership on the road to advance.

The philosopher[2] soars in his thought and attempts to grasp the "infinite," but as a fixed goal, as far as he himself may apprehend it. In his projection of the infantile wish he really finds himself in his conception of God and attains thereby an absolute egoistic security. Therefore he jealously guards his system and fears the truly progressive thinker, who is content to force his way into reality bit by bit through the very real fragments which human experience and the limitless world of nature thrust piecemeal upon him.

It is such a narcissistic attitude which rediscovers itself in its ideals and therefore can not brook their uncovering and demolishment necessary to progress, which must move a modern pastor of one of our large city churches. He has asserted, with the approval and hearty sanction, also, of apparently a large part of his audience,

[2] See Von Winterstein, "Psychoanalytische Ammerkungen zur Geschichte der Philosophie," *Imago*, Vol. 2, 1913.

that we have only so much truth as God has been pleased to reveal to us, that science adopts the wrong starting-point at the very beginning, because she *assumes* knowledge. Safely wrapped in his clerical robes, such a teacher of men can hardly fit them for the actual buffetings of experience. His narcissistic adoration of his own secure phantasy and projected infantile wish does not offer leadership into the problems of reality thrust upon individual and society. Reality must move on, and thus the church is left behind with the few whose libido can be satisfied or compromised by phantasy, an "ark of safety," instead of becoming the pilot boat past the rocks and shoals out into the resource of the infinitely extending sea not of fixed, but of "becoming" actuality.

The author, too, who counts his work done when his book is out between its covers and reflects his potency and charm from his shelves, has really reached no goal. He has merely flung out a challenge to thought. Either he or another must at once take up the gauntlet. And what matter if it be another? The copyright rightfully raises no hedge about the Narcissus pool where the author may admire himself in undisturbed serenity. His thought can not be bound and even his words may be taken from him if some mind more alert seizes the suggestive power of the thought. This is then carried at once through a transvaluation of it in the other's experience, it may be, to a new development, a new application to the affairs of human progress, material and psychical. Instead of narcissistic enjoyment there is therefore afforded a keener and greater pleasure to the original author himself in fresh opportunity to enter the stream of progressive thought higher up, where his collaborator has brought it, and thus the stream of becoming grows greater and each new plunge into duration is richer and more fruitful.[3]

Freud's tracing of human development through the "polymorphous" infantile stages, which normally are contributory to the complete concentration of an effective life, reveals the close merging of one stage into another. In the same manner the opportunities for fixation and for its occurrence at any of these planes are not sharply defined. They can not and need not be clearly separated in this discussion of them. It is enough to point out these certain dangers that lie along the path and which all partake of the same nature. Their consideration is profitable only as it aids in recognizing why and how we become held fast, progress checked and libido driven over into dissatisfaction and revealed even in pathological symptoms which can assume a countenance of plausibility and justification, an infantile beauty which is not recognized as seductive.

Therefore another phase of fixation may be discussed. This mani-

[3] Bergson, *Creative Evolution*.

fests itself sometimes in a curious manner and impedes that mutual cooperation toward achievement and advance which corresponds to the completely heterosexual physical and psychical development of the well-rounded life. The homosexual component of every individual becomes over-emphasized at one point or another and is responsible for much social and intellectual failure and ineffectiveness. Certain dreams from the life history of a patient whose conflict was sharply accentuated by a distinct unconscious homosexual complex followed closely upon a period of social aloofness and professional discrediting of a member of her own sex. They suggested at least one of the very persistent sources of jealousy and want of appreciation that exists perhaps more particularly in woman's attitude toward her fellow worker, who should be also only her collaborator and mutual stimulus toward increasingly higher and wider levels of opportunity. Perhaps woman's necessary biological position and the tardiness with which she has entered into the world of active intellectual achievement has allowed thus far greater stress upon such an infantile mode of reaction to the unconscious homosexual impulse.

Here, likewise, a sense of one's own inferiority plays a large part, but this is an important element in each infantile form of reaction. That is something with which each one must reckon. It is in truth a part of the reality, our attitude toward which determines upon which plane we belong, what is our capacity for effectual attack. This sense of inferiority finds compensation through the impregnable safeguard of the anal erotic hoarding impulse, it creates the image of security for narcissistic absorption, it reacts by jealous depreciation; or in contrast to all these it forms the starting-point for a very real and determined campaign through "extroversion" of the libido upon external actuality and possibility, the finding of one's life through the losing of it.

Just as the child first forms and discovers his reactions toward reality through contact with his miniature world, so the elements of that world are those which appear and reappear in these various forms and grades at which he may become fixed or, on the other hand, thoroughly sublimated in his healthful, complete attitude toward life. Thus the parent complex, the greatest thing, because the closest and by necessity the most exclusive relationship of the early most impressionable years, manifests itself through all these stages. It works also more directly. That which the father has been, has believed, has held as the final ideal must remain the ultimate point of attainment. Nothing beyond this is true, fair, respectable in belief; it is unjust in material affairs. It may be the failure of recognition toward the father's work on the part of society in the past which creates a jealousy of future progress. Injustice to the

father, perhaps merely his own ineffectualness retranslated in the wish revaluation of the child, as of the father, too, blinds one to the value of the rival's work and makes it impossible to see any glory and honor in his future achievements. It forgets that progress can never be stationary, that advance must proceed, and that out of possible injustice and withholding of recognition and reward, even out of wrong, priority has again its two ways of emerging. It may adopt the infantile regressive road of regret, defeat, recrimination, or it may seize upon the outward path which takes up the degree of advance, even if achieved through another's efforts, built upon the vantage point earlier lost for a time, and join once more cheerfully in the onward procession. Even though active participation may necessarily be laid aside, the progressive attitude has not time or thought for jealous withdrawal from at least a sympathetic and self-forgetful swinging into tune and thus a very real participation in the onward march of events.

The uncovering of the infantile pitfalls which still retain the adult libido or lie perilously open for its return is in no sense a dragging of higher achievement and endeavor into a useless contact with the past or even with that which we are accustomed to regard as the mire and too earthly soil. Out of this arose human life and its conditions. A clearer understanding of these things and of their hold upon us must be salutary. The clearer understanding can only come through acquaintance with this other side of our nature whose expression on the conscious, external side is so distorted and so puzzling. A recognition of the broader unconscious side of the dissatisfactions, inadequacies, painful and destructive reactions to the exigencies of competition, brings its own therapy with it. It must point the way to a priority which is founded in the progressive attitude, which has its only justification as a factor in progress, an unresting instigator toward it and an efficient tool for its achievement.

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SPIRIT AND MATTER: A REPLY TO DR. DASHIELL

DR. DASHIELL'S article[1] in a recent number of this JOURNAL interests me as an excellent illustration of the practise now prevalent among thinkers of the pragmatist persuasion of treating the traditional problems of philosophy as meaningless puzzles produced by the barren intellectualism of the past. Thus the ontological dualism of spirit and matter is in Dr. Dashiell's opinion a consequence of the natural tendency of man to generalize

[1] John Frederick Dashiell, "Spirit and Matter: A Philosophical Tradition."

his occasional and incidental distinctions and then to hypostatize the resulting generalizations. He believes, however, that "the traditional problem of spirit *versus* matter may be given vitality by being taken in a larger sense as the spiritual *versus* the material, for this distinction is found rooted in a natural, but relative distinction within the growth of any human experience, whether taken in terms of the interplay of thinking processes or of the interrelations of experienced content. It is the distinction between the data of immediate and imperfect environments and the ends of remote and desirable conditions yet to be effected."[2]

I believe that the distinction between spirit and matter—ontological dualism, as it may be—stands and is destined to stand as a reasonable inference from the most persistent and essential distinction that reveals itself in human experience. The distinction I mean is that between modes of experienced activity. In one department of his experience man finds himself dealing freely with objects; he combines characters and qualities at will, creating new and original objects. The sphere in which human activity thus is self-determined is of course that of constructive imagination whose function is, primarily, to originate new ends for pursuit and attainment, but whose activity may become an end in itself. In the other department of his experience man finds his activity strictly limited, definitely circumscribed, by conditions external to himself. This is the field of motor adjustment, in which the human individual directs the movements of his own bodily organism and, through its instrumentality, alters the position and arrangement of other physical objects. Such action is accompanied by effort, since it must overcome the resistance offered, meet the conditions imposed, by external reality.

Now the most satisfactory explanation of this fundamental difference between modes of experienced activity is furnished, in my judgment, by the supposition that two factors are operating in human experience. These two factors are, first, rational will which strives to increase the number and variety of objects which are open to its choice for realization, and, second, objective reality, which, while it supplies material for the expression of will, nevertheless restricts the range of its activity.

It is, to be sure, impossible to acquit philosophy and the philosophical tradition of the charge of intellectualism. This intellectualism has been shown not in making such distinctions as that of spirit from matter, but in attempting to reconcile the conflicting factors by a formal dialectic which could yield nothing better than conceptual abstractions such as "the good" or "substance" or "the abso-

[2] This JOURNAL, February 1, Vol. XIV., p. 74.

lute." Obtained thus, by an intellectual *tour de force,* these proposed principles of synthesis were of necessity remote from human experience and open only to the understanding of the few who had had the required logical discipline.

The true solution for the distinction of matter from spirit, regarded in the sense just explained as the opposing factors which find expression in our experience, is to be found through a study of man's developing social life. The word "social" deserves emphasis, for it refers to a process more highly developed and hence more significant than the vital and, at the time when sociology is freeing itself from the limitations of the biological viewpoint, it would be unfortunate if philosophy should fall vicitim to a similar obsession. With the living organism the solution of the conflict between actual conditions and desired ends is found in an act of adjustment which, if successful in extending life, begins a new habit. But such an act of adjustment, having become habitual, is itself no synthesis of freedom and necessity; it is itself merely repetitive and holds the factor of originality in abeyance. The reconciling experience which we seek can be found clearly revealed only in our more highly developed social activities; it presents itself as motor adjustment occurring in the external world common to all sentiment observers which like habit has become effortless through practise, but which, unlike habit, stimulates the creative imagination and affords fullest opportunity for the expression of freedom in the realization of chosen objects. Such an activity is that of verbal communication; certain adjustments and coordinations of the speech mechanism and hearing apparatus are made without effort, but they throw open to the choice of the agent opportunities literally limitless for realizing the ideas and experiences, the plans and purposes, of other human individuals. Another activity that is capable of effecting synthesis of subjective and objective factors in one experience is that of cooperation, the cooperation of the individual with others in carrying out the orderly routine of industrial, political, and social life, through the observance of recognized custom, law and institution, and the employment of familiar tools and machines. The motor adjustments involved are soon made without effort, but they can and should bring home to the intelligence of the agent the intricate system of activities which engage together in the work of the world and enable him to realize with sympathetic understanding such ones as appeal to his interest. A third example of the kind of activity in question is that of esthetic appreciation. Adjustments of the sensory apparatus and correlated mechanisms, themselves quite familiar and easy, stimulate the imagination of the agent to new constructions, arouse his thought to an apprehension of new meanings and values; when these adjustments

are called forth by a work of art and particularly where such artistic creation is appreciated by many individuals in common, they establish countless possibilities of personal sympathy and fellow-feeling.

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SOCIETIES

THE SEVENTEENTH ANNUAL MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

THE seventeenth annual meeting of the Western Philosophical Association, held at Ann Arbor, Michigan, on April 6 and 7, 1917, was characterized both by live, profitable discussion and by a prevailing spirit of good-fellowship. The morning and afternoon sessions of the first day were devoted to papers and general discussion centering about three questions formulated by the executive committee as follows: (1) In what sense does the human person possess independence of his physical organism and environment? (2) What reality has the history of the world as the physical and biological sciences present it? (3) Does any being exist that plays the part assigned to God in theistic religion? At luncheon the visiting members of the association enjoyed the hospitality of the local members; in the evening, they were the guests of the University of Michigan at an enjoyable dinner, at the conclusion of which President Hutchins responded very happily to the request that he address the gathering. At eight o'clock the association returned to Alumni Memorial Hall for the address of the President, Professor G. H. Mead, on the subject "The Instinct of Hostility." Following the address came a delightful social hour and smoker in the rooms of the Faculty Club.

Papers dealing with a considerable variety of subjects were read and discussed during the morning of the second day. At noon the business meeting was held. A special order of business relating to the names of the Philosophical Associations of the country was disposed of by the unanimous adoption of the following resolution: "That the President-elect be instructed to appoint a committee of three to state to the officials of the American Philosophical Association the regret of this association for the disposal of the report of their committee proposing a union of the Eastern and the Western Associations; to request a conference with a committee of that association to discuss further plans for the formation of a national organization; and to act as the representatives of this association in that conference." Reports were received from the Secretary and Treasurer, E. L. Schaub, indicating a membership of seventy-nine,

an expenditure during the past year of $25.72, and a balance in the treasury of $177.37. Officers for the coming year were elected as follows: President, H. B. Alexander; Vice-president, E. H. Hollands; Secretary and Treasurer, E. L. Schaub; additional members of the Executive Committee, R. C. Lodge, G. H. Sabine, R. W. Sellars, David Swenson. To membership there were elected: J. M. Mecklin, D. H. Parker, and W. E. Slaght. Resolutions of thanks were voted to the President, the Board of Regents, and the members of the philosophical staff of the University of Michigan. The executive committee was charged with the decision concerning the time and place of the next annual meeting and with the task of devising some fixed plan determining automatically year by year the place, or at least the region, in which the meeting of the association is to be held.

The following are abstracts of papers read at the meeting. Where titles are missing the papers dealt with one or more of the questions formulated by the executive committee.

E. H. Hollands.

Idealism in this paper does not mean that the real is ideas in somebody's mind, or that the understanding makes nature; but it does mean that the ultimate truth is an exact individual union of intelligible meaning and given existence. The datum as such simply is; but for thought it is to be understood. "Things" and "ideas" are existences, but to be philosophical we must ask what they mean. Human thinking develops its concepts and meanings experimentally, in the service of purposes and ends. Hence men live in a world full of unions of matter and form, datum and meaning. But not all of the purposes of thinking are particular purposes, relevant to particular existential situations. Thought becomes free reflection, and begins to examine the categories which as yet it has merely used. The connectedness of the "real" is emphasized, and each concept and category is now to be evaluated, for the purposes of philosophy, by its adequacy in giving intelligible form to the whole of reality. We do not have the whole of reality as datum; it is because we do not that philosophy is abstract. But we do have what we may regard as a fair sample of reality, and from it we may gather its general nature. We note that when we reflect, the particular reference to a personal consciousness is put into the background, and all that is appears as a union of datum and idea, both of which are there for the reflecting mind. The inference from "degrees of reality" is added. The conclusion drawn is that the adequate conception of reality is that of an absolute self-consciousness, whose datum is itself, but itself as expressed and particularized in finite minds, as these finite minds in turn find their datum in nature as well as in other minds. Is any

essential value of theistic religion lost in such a conception of God? A common objection is that it makes God a bare abstract intellect. But thought carries feeling and will along with it through the whole process of reality. Art and religion are part of the evidence which philosophy has to consider. The "timelessness" and "moral indifference" of the absolute are also found objectionable. But time is supposed to arise within the absolute reality and to be entirely real, on its proper level. Every important religion subordinates time in some way. The difficulty about evil is the same for all theologies which do not make God finite.

The question about the independence of the human person I take to mean, How far are his acts not the results of his physical organism and environment? The answer is, Just so far as he is a finite mind, with the power of abstractive thought. He can think-feel-will one thing to the exclusion of others, and act accordingly. If the independence means separability of the essential person from organism and environment, we must say that here as elsewhere the spatial and temporal dissolves and recedes indefinitely when analysis attacks it.

There is no sense in asking, in such reductions of the physical world, when we get to the real. If a choice has to be made, the idealist will say that the sensible world is the real world, refuse to allow any distinction between primary and secondary qualities, and call the hypothetical entities and ascertained laws of natural science real in so far as implied in the concrete entities of the sensible world. The history of this world, as given by the physical and biological sciences, he will regard as real. Why not? Idealism, rightly taken, does not require mental presentation for reality; it requires meaning for mind rather than existence in mind. And this the history in question has, since it is cognizable by mind and eventuates in mind. It has been said that such a view excludes all real novelty in this history; everything is implicit in what goes before. Just the contrary is the case; everything is implicit in the whole, and for just that reason novelty in the temporal process is possible. But no speculative philosopher who knows his business will attempt to deduce external reality from thought, the datum from the idea.

R. W. Sellars.

The form of realism represented is critical realism. It is the aim of critical realism to get to a more adequate view of knowledge than that suggested by natural realism. Its main epistemological principles are four in number: (1) Mental pluralism. (2) That the significant distinctions used in philosophy arise within each individual's consciousness. (3) That the sense-organs are the windows of the mind. (4) That knowledge consists of cognitive ideas built up within experience and is non-apprehensional.

These epistemological principles brought to bear upon the results of contemporary science lead to certain metaphysical conclusions. I shall emphasize five of these: (1) The knowledge of the physical world (reality) gained by the physical sciences does not conflict with the acceptance of consciousness as a part of the nature of the physical world. (2) There are levels of causality in nature which we seem forced to connect with an evolutionary process involving something of the nature of creative synthesis. (3) Mind is a term which observational psychology (objective psychology, behaviorism, animal, or comparative psychology) connects with types of behavior and their internal control. (4) This knowledge of the capacities of the individual necessary to account for the type of behavior is valid knowledge of the organism. Thus the mind is not a separate thing. But (5) consciousness is also referable to the nervous system and we can therefore bring nervous system, mind, and consciousness together into one unity.

If these conclusions are tenable, the mind-body problem is a product of an inadequate epistemology and an unevolutionary view of nature. The human person is inseparable from his organism; nay more, is one with his organism.

Pragmatism and Immortality: A. W. MOORE.

The beginning of the pragmatic movement witnessed the paradox of apologetics based on pragmatism, some of whose representatives had characterized other philosophies as disingenuous apologetics. The paradox was due, first, to the desperate situation of apologetics. Kant had destroyed immortality as a logical postulate and the Hegelians had demolished it as an ethical postulate. But this destruction was not a matter of mere dialectic. The dialectic was an expression of the fact that the new demands of logical, *i. e.*, scientific, and ethical, *i. e.*, social problems could no longer tolerate the limitations which it was necessary to place on the formulation of the problems of science and society in order that they should require the postulate of immortality.

In this situation apologists seized eagerly upon the rumor that pragmatism taught the subordination of truth and thought to desire. But this was based on a misconception of the pragmatic doctrine concerning both thought and desire. In relation to any particular form of desire it is the teaching of pragmatism that the business of thought is, in old-fashioned phrase, to "rationalize" it. This means the reformation and remolding of desire so that (1) intelligent steps for its realization may be taken; (2) that it shall be made to cooperate and not conflict with other forms of desire. On this basis the question is, Can the desire for immortality be "rationalized,"

or is it a dumb longing and hope which can not be organized scientifically with other desires?

Except by the psychical researchers, the problem of immortality is not taken as a genuine problem involving a genuine future, *i. e.*, a problem for whose solution we definitely set about, projecting hypotheses and attempting verifications. Speculations concerning the qualitative and quantitative limits of our bodies based on the maintenance of personal continuity through mutilations and transformations of the body do not operate as scientific hypotheses nor do they involve a disembodied existence. But this does not justify the dogma that immortality may never attain the status of a genuine problem.

Experience and the Physical World: B. H. Bode.

The experience of the individual is a temporal event, and this temporal character requires proper recognition. The difficulties involved in according such recognition have led some to explain away the experience, while others have explained away the antecedents of the experience or else have transmuted the temporal element into something else. The way out is to conceive experience as the functioning of things in the interests of adjustment. The fact that the things and qualities presented in experience involve relationship to the body is no warrant whatever for the supposition that they are not genuinely objective. There being no absolute standard for determining what things are like "in themselves," their nature must be determined with reference to the relations in which they appear. Knowledge is not a matter of copying or of static "correspondence," but consists in the function of representation by things of other situations, other possible results. Such knowledge is true in every intelligible sense of the word, and the only questions that are theoretically unanswerable from this standpoint are questions that should not be asked.

E. S. Ames.

There are various conceptions of God in theistic religion and of the part which He plays. If a particular, individual being, omniscient and omnipotent, is meant, pragmatism would not affirm or deny. Neither would it take the agnostic position. It views that question as a puzzle.

Pragmatists have not written much on the subject. James regards God as an hypothesis,—true if it works satisfactorily. He declares his faith in a finite God which is "the ideal tendency in things."

Irving King says the concept of God "is an expression of personal attitude rather than a statement of an existence of some sort."

"So far as such symbolism satisfies and helps, it represents a genuine aspect of reality." "A god is always a reflection of the character of his worshipers."

Reality includes the reflective, idealizing activity of human experience. Creative intelligence is manifest in science and in social organization and in the progressive reconstruction of society. The individual feels himself borne up and stimulated by the social order, which exercises a kind of providence over him. He tends to take a personal attitude toward it. He uses personal symbols for social organizations, *e. g.*, colleges, cities, nations; for nature and life; and for the whole of reality in certain intimate and vital experiences. God, therefore, symbolizes existent reality especially in its social, ideal aspects.

A Realist's Past: G. D. WALCOTT.

Attention is directed to the many disagreements among scientists themselves so that no single, authoritative view of the world may be insisted upon. There are, however, several agreements, as in general method, the actuality of the external world, and the principle of the uniformity of nature.

In view of the general situation, the first point offered emphasizes the reality, or better, the actuality of any mental construct, considered as consciousness, directed toward the world as it is at present. Few of such constructs, however, are perfect, and if that be true of our mental attitude toward the world to-day, why should we expect perfect constructs with reference to the past? A fairly close approximation, based upon the best evidence obtainable, is all that we may legitimately demand.

The discussion, also, naturally calls for some statement of position with reference to time. This concept, following Newton, may best be regarded as fundamentally a duration. We have, however, our general tendency to measure that duration, and immediately we are involved in a consideration of the logical present and the specious present. If, however, we enlarge that specious present, we can think of the entire life of our solar system as a present. The subordinate divisions ordinarily made are for convenience, and frequently are determined by our myopia. The larger view suggests a something continuing for a long period of time, of which the different stages, as pictured by the scientific imagination, are simply aspects. There is a persisting core which we must recognize as well as the continually changing superficial aspects.

In closing, reference is made to an article by Royce in *Science* of three years ago. Here emphasis is laid upon a statistical interpretation of the world in place of the older, more rigid mathematical inter-

pretation. If this were followed out in detail, a looser, freer attitude toward the past, as well as toward the present, would prevail. This is approved as a substitute for the more precise demand of the absolutist. The realist has little trouble with his conception of the past. The absolutist, also, would have less trouble, if he would take this hint from Royce.

Lower Sensation Complexes and Reality: EDWIN D. STARBUCK.

Reality is in terms of value, and value lurks in the lower sensation complexes, or in the higher, in so far as the higher are surcharged with meaning derived from the lower.

The division of the senses into higher and lower cuts across most of the senses. By the higher senses one should mean all of them—chiefly sight, hearing, touch and kinesthesia—in so far as they furnish discrete and spatial qualities of experience. They should be designated the spatial or relational senses. The lower senses are those that report objects in terms of immediacy. They should be called the intimate senses.

The higher and lower sensations taken together are the universally conditioning factors of mentality. There is nothing in the mind that was not in the senses.

In art and religion the human interests in which reality is most meaningful, the intimate senses operate at the expense of the relational. The artist is great, other things being equal, in proportion to his success in appealing to touch, taste, smell, temperature, organic, and kinesthetic sensation experiences. Instances are Shakespeare, Tagore, Rodin, Jesus, the consummate moral artist, and William James, the supreme artist in portraying the facts of the mental life.

Dr. E. L. Mudge has shown empirically that from childhood to maturity the relational senses play a less and less significant rôle—from 77 per cent. among children to 0 per cent. among cultivated adults.

Ontology has always been tricked into taking its point of departure from the spatial or relational senses. It has, accordingly, pictured reality as something artificially formal, logical, structural, and objective, and has been driven into quibbling over empty formulas, false distinctions, and insoluble antinomies of its own devising. By way of reaction from its barrenness those who have a passion for a meaningful reality have found two antithetical ways of escape, neither of which is a true deliverance, transcendentalism and subjectivism.

A truer point of departure for ontology, if one must choose, is the intimate senses where reality resides. True being will then be appreciated as a somewhat that is, perhaps, warm, agreeable, satisfying,

impelling, fulfilling, purposeful, tasteful, lovable, beautiful. Its values will be caught up in acts of immediate apprehension rather than confined in exact definition. Its meanings will be symbolized by the imagination more truly than can be formulated by the reason. Metaphysics will not draw less from logic and the exact sciences, but a deal more from art and religion. The outcome of its doctrine will be not unlike Baldwin's theory of "esthetic immediacy," though it may culminate in any set of values that seem most meaningful.

For such a notion of reality to seem congenial at least four reconstructions must displace an equal number of psychological distortions: (1) The intimate sense-perceptions are not subjective. They invariably report outer conditions and one's relation to them,—the cold weather, the painful object, the agreeable or desirable food. The opposite psychologically of objectivity is *intimacy,* not-subjectivity. (2) Cognition and affection are not correlates in the sense of being basal mental states and processes. The true correlates are cognitive evaluation and immediate valuation. The fundamental fact of mentality is: (the self or organism)—(experiencing and interpreting)—(external relations and objects). There are two modes of awareness of experience, the one factual and relational, the other tending to catch up the three phases of experience into one pulse of consciousness. (3) The affections are thus not "elements" of mentality. They play about and through all experiences, the cognitive and intimate alike. (4) The higher refinements of mentality do not happen exclusively through the intermediating rôle of cognition. The intimate sense experiences refine themselves directly through their entanglements, tensions, and resolutions. In the evolution of the skill of birds and fishes in migrating, in the higher expressions of the love impulse, in the enjoyment of art and the life of religion, cognition has doubtless played a relatively modest function.

The doctrine of reality here suggested mediates realism and idealism, furnishes a working basis for pragmatism and sensationalism, abhors subjectivism and transcendentalism, is reticent about absolutism and, although agnostic upon the question of monism, leans in its direction rather than towards pluralism.

The Meaning of God to the College Man: J. M. Mecklin.

An examination of the replies of students to questionnaires submitted by the writer shows that for the rationalistic type, the idea of God is serviceable because it provides a more logical world-order; for the mystic, God satisfies the need for companionship; for the pragmatist, the theistic idea provides sympathetic moral support in the struggle for righteousness. The question of the persistence of the theistic belief is, therefore, a question as to the extent to which the

notion of a personal God will continue to satisfy the logical, social, and moral needs of men.

Training in scientific method and in philosophy tends to invalidate conventional theism since the ideas of God, the universe, and society associated with traditional theism have little or nothing in common with the world-view of the modern scientific laboratory. An interesting sidelight upon the effect of scientific training upon traditional theistic beliefs is afforded by the results of Professor Leuba's questionnaire submitted to American scientists.

The incentives to independent thinking in the university through association with men more interested in the search for truth than in the maintenance of conventional beliefs, undoubtedly influences the student—the male students to a much greater degree than the female—in rejecting traditional beliefs.

More fundamental, however, than scientific methods or the critical attitude are the slow-moving and deep-lying forces of the social order which tend to make traditional theism superfluous in the thought and life of many men and women. This is particularly true in a democracy embracing millions. The will of the majority tends to supplant the transcendental rôle once played by the theistic idea. The atmosphere of supernaturalism associated with traditional theism is antagonistic to the modern attitude which tends more and more to find the measure of values and the goal of effort in this world.

We seem at present to be in a transitional stage. The masses of men and women of the conventional religious types still find the theistic belief necessary to their thought and life; they do not trouble themselves with the scientific difficulties that arise when we try to reconcile conventional theism with evolution or other accepted scientific concepts. Neither do they feel the social ineptitude of such a belief. There are, however, an increasing number of reflective minds that have discarded the belief; they are found for the most part among highly scientifically trained members of the community. Their significance lies in the fact that they are our intellectual leaders and to their care the community has committed the training of the generation of to-morrow.

The Fear of Machines: H. B. Alexander.

Ignorance, not of nature, but of human nature, is the cause of our political superstitions. Among these, two are paramount: Belief in socialized impulse or feeling, and fear of the devices of organization —machines, material and social. These two are correlative evils, due to a deformity in society. Reliance upon feeling as a guide to conduct (be it in appeals to divine right or to the *vox populi*) is a superstitious abnegation of reason in society; fear of organization, be it

political, economic, or military, is a superstitious rejection of the means of human progress, an abnegation of the instruments of reason. A sane society is one which rationally understands itself and hence understands the proper application of its tools. Consciousness of ends is the cure of social phobias, because consciousness of ends is the key to self-control, in the state as in the individual. The tendency of states (like that of individual men) is lazily to sink back into a reliance upon appetite and impulse, whence is conjured up the specter of militarism and other social bogeys. In sane societies, states gifted with an alert reason and a true understanding of their own rational interests, these cease to terrify.

God, and the Knowledge of God, according to Bergson and Spinoza: V. T. THAYER.

Spinoza's substance, as *natura naturans,* is contrasted with Bergson's *élan vital.* Spinoza means by substance, infinite power and infinite efficacy. Spinoza's relation to Descartes, his acceptance of the physical theories of Descartes, and his correspondence with Tschirnhausen, in which Spinoza expresses dissatisfaction with the conception of extension as originally a quiescent mass into which motion was injected, and in which he expresses the purpose to redefine extension, are the grounds upon which this interpretation rests. Substance is manifested to man through two attributes, infinite cogitation and infinite physical agency. The individual thing as conceived by man in *natura naturata* is artificial and partial, but its nature is still that which it has in its context: to be power, to be the endeavor to persist in being.

It is maintained that Bergson has much in common with this conception. For him reality is concrete movement, an undivided creative activity. It is a continuity of becoming—the *élan vital.* The essential difference from Spinoza's *natura naturans* is the ascription of physiological characteristics to the *élan.* For Bergson, thought is the fundamental revealer. Barring this difference, the materiality and intellectuality of Bergson correspond to Spinoza's attributes of extension and thought. Further, the two philosophers agree in their description of individual things. For Bergson as well as for Spinoza, the living body is a material zone, a center of activity, that cuts out from reality objects which are partial representations only, but which thus abstracted retain their inner character unaltered.

With reference to the question, "How do we know Reality?" the paper compares the criticism which Bergson and Spinoza make of "practical knowledge." Spinoza designates this knowledge of the imagination; Bergson terms it conceptual knowledge. In the *Ethics,* Spinoza condemns the general idea on the ground that it is inade-

quate and relative. In the *Introduction to Metaphysics,* Bergson rejects conceptual knowledge, for the concept generalizes at the same time that it abstracts, and thus misses reality itself. Both Bergson and Spinoza admit that this type of knowledge serves the purposes of practical life, but they both insist that philosophy must possess absolute knowledge. This is secured through intuition, or the intellectual love of God.

The remainder of the paper is an endeavor to show that Bergson's intuition and Spinoza's intellectual love of God are similar. For each practical knowledge is insufficient. Each bases intuition upon scientific knowledge, and each appeals to a mystical experience which, while based upon scientific knowledge, transcends analysis and identifies the individual with undivided flux, with the flow of an eternal, becoming reality, *élan vital* or *natura naturans,* which both call God.

"Suggestion" in the Philosophy of Locke: R. C. LODGE.

The prevalent idealistic interpretation of Locke's philosophy lays much emphasis on his use of the term "suggestion" in connection with certain ideas such as unity, existence, infinity, *etc.* A more thoroughgoing study of Locke's language, however, shows that the term is used both more widely and more narrowly than is consistent with this interpretation, and that in fact it appears to be a fairly rare and purely stylistic variant for terms of merely empirical signification.

Anger, Resentment, and Retribution: ELLSWORTH FARIS.

The doctrine of retribution as a theory of punishment has changed front. Formerly it was theological and metaphysical, relying on the vindication of abstract justice or abstract moral law. At the present time it is a psychological argument on which the theory depends. The instinct of anger leads to a feeling of resentment, which calls for the retributive inflicting of pain on any one who has committed an offense. The argument is that to ignore this fact is to fly in the face of human nature and that, therefore, punishment can not be merely reformatory or merely social and remedial in character so long as the moral ideas and sentiments of our people remain as they are.

This modern form of the theory neglects the fact that resentment is a social manifestation and is never abstract, but always concrete and relative to the social relations of the one who judges and the one who is judged. The social relation of the one who is injured also enters in. A given act done by my enemy, my friend, and a stranger, is not one act, but three, and calls out a different reaction in each case. Moreover, there is a further complication in the matter of the one to whom the injury is done. If my friend injures my friend, if

my friend injures my enemy, if my enemy injures my friend, or my enemy harms my enemy, and so on, there will be a different complication in each case; and a different reaction.

If, therefore, the offender be considered a real member of society and the attention be focused on the best method of restoring him to complete and beneficial membership in the group, the instinct of resentment would be very little in evidence.

There is, therefore, a *moral factor of safety* which is a function of the social relations of the three parties to the situation, and the reaction is different with respect to this factor.

The real psychological fact which this erroneous formulation is trying to meet is the restlessness and uneasiness that is normally felt when the matter does not receive any attention. Our instinct of resentment (?) is almost as well satisfied if the murderer is released after a trial especially if we are sure the trial has been "fair," as if he is punished.

Anger and fear, interacting, have generated cruelty which, becoming deliberate, is habitual, then a custom. Such customs are largely the antecedents of our punishments, which have run through a development as ordeal, torture, great severity, and gradual amelioration. In an integrated society, a rational method of dealing with criminals would encounter no opposing instinct on account of the factor of safety.

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REVIEWS AND ABSTRACTS OF LITERATURE

Bergson and Religion. LUCIUS HOPKINS MILLER. New York: Henry Holt and Company. 1916. Pp. ix + 286.

Mr. Miller writes from the standpoint of the student of religion. His aim is to "determine what would be the religious result of a complete acceptance of the Bergsonian philosophy and thus determine whether, and how far, this philosophy is compatible with religion, and especially with the Christian religion" (p. 26). He believes that religion and philosophy can not ignore one another. While religious experience is a fact of human history, "the grist of religion must be put through the mill of philosophy that man may secure a product of the very highest value, with the chaff of ignorance and of illusion winnowed away" (p. 23).

Mr. Miller's method is to present first, without any criticism, what he calls the "outstanding emphases" of Bergson's position. He does this very largely by means of well-chosen quotations from the

English translations of Bergson's works. He then passes, in each case, to a discussion of the religious implications. Thoroughly familiar with the sources, he presents a remarkably clear and very readable account of the main trends of Bergson's philosophy and of its value for religion. Those who are familiar with Bergson's thought should be interested in its skilful application in the sphere of religion. Those who are not may here gain an introduction to it.

Mr. Miller finds that Bergson's philosophy is in many ways directly favorable to religion. He concludes that Bergson, in his opposition to scientific dogmatism and extreme philosophic intellectualism, is a leader among those who give religion a great opportunity, a clear field in which to demonstrate her power and vitality; that Bergson's epistemology gives philosophic justification to religious faith, for faith and intuition are clearly related, although they can not be identified; that Bergson maintains the reality of the two factors essential to religion, the spiritual fountain-head and the individual soul; and that Bergson's thought lends support to a belief in the survival of personality after death. Mr. Miller also holds that Bergson's defense of freedom is peculiarly helpful to religion; that evolution then appears as a spiritual development in which there is increasingly free interaction between the life-principle and its offshoots, our human personalities; that such a view would favor "that union of mysticism and active participation in the world as it is, which is so marked a characteristic of Christianity" (p. 228).

But the religious implications are not always so clear. Mr. Miller finds himself beset with difficulties when he seeks to derive a conception of God from Bergson's evolutionary theory. Two main problems arise. In the first place is this theory compatible with theism? Mr. Miller quotes Bergson's direct, but informal remarks on this subject, but here as elsewhere he is careful not to attach too great weight to them, and to draw his conclusions from Bergson's formal writings. As these do not yet include any direct treatment of religious problems, he thinks that it would be unfair to attempt "to identify the Vital Impetus, as thus far expounded, with the God of religion" (p. 105). He feels that much of Bergson's language lends itself to the uses of pantheism, but still he holds that, though Bergson's creator is immanent in nature, he is not, like the God of pantheism, identical with it.

It seems to the present reviewer that this is one of the few places where Mr. Miller shows that he has not fully caught Bergson's view. Had he done so, he would have found it less hard to maintain its compatibility with theism. There does not seem much ground for a belief in God's transcendence if, as Mr. Miller says, the limited vital impetus is the basis of all and the final reality of the universe. Mr.

Miller frankly admits that he does not see how Bergson derives matter from an original spiritual force. But this derivation is only the wider aspect of the relationship of matter to mind which, in Bergson's theory, depends on his view of duration with its differing degrees of tension—the view that is fundamental in his thought.

God must be pictured, according to Bergson, as the free center of the birth of worlds. Does it not follow that God is the life-principle, immanent in limited form in the vital impetus of our world and in all other worlds, but also transcendent, not wholly expressed in them? Such a view should lessen some of Mr. Miller's difficulties. It is, however, perfectly true that a God compatible with Bergson's views can not be foreign to duration, that he is developing and has indeed his battles and defeats. This brings us to the second main problem. Mr. Miller rightly feels that if this development be a mere flux, if it be without plan or purpose, Bergson's thought conflicts with religion. He concludes, however, that a follower of Bergson may connect with God consistency of character and purpose. God "might change without being changeable." There are very real difficulties here, but it seems once more that Mr. Miller could have found a broader basis for his conclusion. However this may be, his final verdict is that Bergson's view of evolution is compatible with Christian theism, though not with all that goes under this name. There is truth in all religions that are alive, but does not Christianity most fully reveal the character of God?

Mr. Miller feels that "it is refreshing to turn away from the lifeless discussions of so much of our orthodox philosophy and theology towards a philosophy that seems, at least, to live and move and have some being, even if its 'being' be 'becoming'" (p. 50). His book passes on to us the same sense of refreshment. While not a Bergsonian himself, Mr. Miller thinks that Bergson points a way whereby religious thought may be revitalized. He is aware of the fact that other religious inferences may and have been drawn, and that some of Bergson's own disciples are more "tough-minded" than their master. But, he says, we must not expect too much from philosophy, only "that we shall gather momentum along the track of reason so that when we reach the end of the track—and end it must, sooner or later—we may rise surely and triumphantly on the wings of faith into those regions whither reason can never penetrate, but whence comes, through faith, a much needed inspiration for life" (p. 274). Bergson leaves us free to believe without blinking the facts; more than this, his philosophy encourages faith.

And this, after all, *is* Bergson's fundamental contribution to religion. Mr. Miller rightly suspects that often with the agnostic "the Absolute which went out of the door, clothed in the garments of

knowledge, has come in again at the window, garbed in the weeds of ignorance" (p. 41). To doubt is to take sides against faith. Religious faith is no mere hypothesis, it implies unceasing action. As James has shown, to refuse to make the venture of faith is to deprive ourselves of the opportunity of proving it by its fruits. But on the basis of Bergson's thought, the leap to faith need not be taken entirely in the dark. Bergson destroys radical agnosticism and gives us confidence that in our deepest experiences we grasp reality.

UNA BERNARD SAIT.

ORADELL, N. J.

The Holiness of Pascal. H. F. STEWART. Cambridge: University Press. 1915. Pp. ix + 145.

In this little volume, the Hulsean Lectures for 1914–15, the dean of St. John's College, Cambridge, gives us a sketch of the life of Pascal together with a discussion of his controversies, his doctrinal system, and his personal religion. The writer's purpose is avowedly to establish Pascal's right to be called a saint, though the lectures show no systematic attempt to prove this thesis.

Mr. Stewart has brought to his task a sympathetic understanding of the great Frenchman's genius and a comprehensive knowledge of the large literature on the subject, as is evinced by the forty-four pages of scholarly notes at the end of the volume. The book makes excellent reading. Every page bristles with facts. Interesting anecdotes abound in almost gossipy profusion. One lays down the volume with the feeling that the writer has given us a very real insight into the life and thought of Pascal.

At the same time it may be doubted whether Mr. Stewart has made any real contribution to our knowledge of the great Jansenist. This is mainly due to the spirit and purpose of the lecturer himself. He has given us in these four discourses a curious mixture of the sermon and the lecture. He tries to inform, criticize, and edify at the same time. Hence the interests of the theologian and the preacher are often sadly at war with those of the scholar. In the opening biographical lecture, for example, the writer's chief concern is to show that Pascal was not of the inner circle of Port Royal, that when he turned to religion he did not desert mathematics, and that he was a man of wealth and position (p. 3). The emphasis of these relatively unimportant details becomes intelligible to us when we remember that the achieving of saintliness by Pascal in spite of money, mathematics, and *la vie mondaine* is, from the writer's point of view, all the more creditable to him and to religion. The rather unsaintly behavior of Pascal when his sister wished to become a nun is excused with the remark that "grace was not yet at work" (p. 8). The lec-

ture closes with a sermonic exploitation of Pascal's famous death-bed utterance, "May God never abandon me," in the interest of the hearer's spiritual welfare. It is difficult to understand why the author did not omit the pious ejaculations which adorn his pages like purple patches. They may have had their justification when the lectures were delivered, but when read in sober print they are strangely incongruous in a work making any scholarly pretensions.

Of the four lectures the most informing in some ways is the second, "Pascal in Controversy." It provides an excellent insight into the disputatious soul of Pascal, for debates of a scientific or religious nature at all times seemed to have consumed a large part of the intellectual powers of this remarkable man. Mr. Stewart's estimate of Pascal's controversy with the Jesuits—"he was historically wrong in his attack. Yet we can not but hold that his instinct was sound and his victory deserved" (p. 42)—seems to indicate a lack of appreciation of the spirit of the times and of the immediate issue before Pascal and the Jansenists. A balanced historical estimate of Jesuitism was impossible and would have been taken as an indication of weakness. The attempt in lecture III. to construct a system of theology out of the *Pensées,* hardly of interest to one not a theologian, can not be called a success. The theological penchant also emerges in the writer's labored attempt to show from the *Pensées* that Pascal had broken away somewhat from the stricter Jansenist doctrine of grace (p. 68). Pascal's mystical repudiation of the intellect in religion is endorsed, and the lecture closes with this delightful bit of pious obscurantism, "Pascal, who loved Truth above all else, is looking beyond Truth to the source of Truth and perceives that the most ardent pursuit of light, the blindest renunciation of one's will and self, are after all only means to an end, an end which is as far beyond our comprehension as are the Wisdom and the Knowledge whereby He orders all things, of whom and through whom all things proceed, and to whom they all return" (p. 71).

The last lecture on Pascal's personal religion, which should provide us the key to all the others, is in some ways the weakest in the book. It betrays in especial fashion the writer's lack of acquaintance with the large and growing body of literature on the psychology of religious experience, a knowledge of which must be made the basis of any intelligent and satisfactory interpretation of the remarkable religious experience of Blaise Pascal.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. January, 1917. *Énergie et Force* (pp. 2–36): F. LE DANTEC. – "Force" is a verbal fiction and science should free itself from the use of the term. The concept of force is a hybrid relic of anthropomorphism, and the employment of such a term forces science to enunciate its discoveries in a language which affirms the contrary of that which it is intended to recount. *Sur quelques formes de nos efforts* (pp. 37–59): DR. JEAN PHILIPPE. – Whatever the degree and form of effort, effort consists in a deployment of an energy that is spontaneous, because it is nascent, and intelligent because perfectly applied by previous experience; it is opposed to the automatism of our habits and conforms to our personal initiative. *De quelques espèces de libertés et de quelques-unes de leurs conditions* (pp. 60–89): ADRIEN NAVILLE. – Contends that liberty of execution, of action, must be distinguished from "free will." Distinguishes "psychical liberty," "physical liberty," and "social liberty" as forms of liberty of execution, and insists that "psychical liberty" should not be confounded with freedom of the will. *Revue Critique.* De Saussure, *Cours de linguistique générale:* B. BOURDON. *Notices bibliographiques.* M. de Almeida Cavalcanti, *Essai d'un cours philosophique de calcul arithmétique, d'après Auguste Comte:* M. SOLOVINE. Mme. Lipska-Librach, *Sur les rapports entre l'acuité sensorielle et l'intelligence:* B. BOURDON. Arthur J. Gates, *Variations in Efficiency during the Day, Together with Practise Effects, Sex Differences, and Correlations:* B. BOURDON. Arthur J. Gates, *Diurnal Variations in Memory and Association:* B. BOURDON. *Revue des Périodiques.*

JOURNAL OF ABNORMAL PSYCHOLOGY. February–March, 1917. *A Manic-Depressive Attack Presenting a Reversion to Infantilism* (pp. 359–367): RALPH REED. – The actions of a case of a manic-depressive attack are described. *The Genesis of a Paranoic State—Delusions of Persecution based upon a Character Defect in Volitional Equipment* (pp. 368–395): THOMAS H. HAINES. – A male patient, age 34, in the Boston Psychopathic Hospital who had threatened the safety of an elderly gentleman, is described. *Genetic Antecedents of Free Association Materials: Miss Z's Case* (pp. 396–408): C. S. YOAKUM and MARY C. HILL. – More data are given on the case of Miss Z which was presented in a previous number of the *Journal.* The method of psychoanalysis is used. The fatal mistake in the integration of conflicts seems to be in the omission of adequate stimuli or "objects" at the time of the conflict or tension. *Seventh Annual Meeting of American Psychopathological Association:* Re-

ports. *Reviews:* Binet and Simon, The Development of Intelligence in Children and The Intelligence of the Feeble-minded: FLORENCE MATER. George T. W. Patrick, Psychology of Relaxation: MEYER SOLOMON. Michael F. Guyer, Being Well-Born: E. E. SOUTHARD. Edgar Schuster, Eugenics: E. E. SOUTHARD. Emil Lucka, Eros: The Development of the Sex Relation through the Ages: H. M. KALLEN.

Anderson, B. M. The Value of Money. New York: The Macmillan Company. 1917. Pp. xxviii + 610. $2.25.

NOTES AND NEWS

FORMER and present graduate students of the department of psychology of Cornell University and a number of his more intimate friends among the faculty met with Professor E. B. Titchener in the Psychological Laboratory on the evening of June 22, to celebrate the completion of twenty-five years of his service to Cornell.

A volume of *Studies in Psychology,* edited by Professors W. B. Pillsbury, J. W. Baird, and M. F. Washburn, and published by L. N. Wilson, at Worcester, Massachusetts, was presented to him on the occasion. The book contains the following papers: E. C. Sanford, *A Letter to Dr. Titchener;* M. F. Washburn, *The Social Psychology of Man and the Lower Animals;* W. B. Pillsbury; *Principles of Explanation in Psychology;* C. G. Shaw, *The Content of Religion and Psychological Analysis;* J. W. Baird, *Memory for Absolute Pitch;* R. M. Ogden, *Some Experiments on the Consciousness of Meaning;* R. H. Gault, *The Sense of Social Unity: A Problem in Social Psychology;* H. C. Stevens, *A Revision of the Rossolimo Tests;* L. R. Geissler, *The Affective Tone of Color-Combinations;* H. M. Clarke, *A Note on Recognition;* H. P. Weld, *Meaning and Process as Distinguished by the Reaction Method;* A. S. Edwards, *The Distribution of Time in Learning Small Amounts of Material;* K. M. Dallenbach, *The Psychology of Blindfold Chess;* C. A. Ruckmich, *Visual Rhythm;* L. D. and E. G. Boring, *Temporal Judgments after Sleep;* C. E. Ferree and G. Rand, *The Selectiveness of the Eye's Achromatic Response to Wave-Length and its Change with Change of Intensity of Light;* J. N. Curtis, *Tactual Discrimination and Susceptibility to the Müller-Lyer Illusion Tested by the Method of Single Stimulation;* W. S. Foster, *A Bibliography of the Published Writings of Edward Bradford Titchener.*

After the presentation, Professor Titchener responded with some reminiscences of the early days of the Cornell Laboratory, and in conclusion announced that he had declined acceptance of the chair of psychology recently tendered him by Harvard University.

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PSYCHOLOGY AND SCIENTIFIC METHODS

ON INDUCTIVE INFERENCE

ALL probabilities are man-made. They result from limited vision. If we knew things as they are our statements regarding them would be assertions of truth or falsity—and it is only when we are dealing with matters whose certainty is questionable that we make statements regarding that which is probably true. To know the exact nature and extent of that which is questionable among all the information which is used in making inductions is a highly important matter. Yet we regard our statements about probability as definitely not-questionable. It is true that so and so is probable, first, because there is a certain bit of truth available, and, secondly, because there is in addition the truth that something is questionable. Both of these matters must be explained in justice to any system of reasoning which has probability for its end, and the meaning of *probable* must be exactly defined.

The word, *probable,* as W. Stanley Jevons has pointed out, is essentially the same as the word, *provable.* Though for modern usage the provable is that which can be demonstrated, it has not always been so nor is it now so in all languages. When Christopher Marlowe's Passionate Shepherd addressed his lady—

> "Come live with me and be my love,
> And we will all the pleasures prove
> That grove or valley, hill or field,
> Or wood and steepy mountain yield,"

he evidently meant to suggest that they should test, examine, and find good, that is, verify, the various pleasures to which he referred. And in German the word for test is *Probe.* But if the probable is merely the verifiable, or that which may be tested *and found,* then indeed it is impossible to understand in what sense a belief that works is, as we commonly say it is, probable. For the belief that works is a belief relative to a situation which is not accessible. Could we have access to the situation, we should not have a probably true workable belief, but would be confronted with fact. Between hypotheses, which are verified in their consequences, and the laws of

science, which are repeatedly verified by particular fact, there is a distinct logical difference; and to call them testable in the same sense is to speak loosely. Moreover, if the probable were merely the testable there would be no question of inductive logic—not that that would be a calamity—but there would nevertheless remain the question, "What do we mean when we say that a belief which has been repeatedly tested is probably true?" A few things considered, *testable* and *probable* are not synonymous.

For the classical logic inductive reasoning was reasoning from the particular to the general. The so-called "inductive or Baconian method" in science, the introduction of which has been ascribed, probably falsely, sometimes to Roger and sometimes to Francis Bacon, may be formulated thus:

(1) *A* explains *B*, and *B* is observed.
(2) *A* explains also *C, D, E, etc.*, and these are sought out and found.
(3) *A* is probably true.

To be sure this formulation may be taken as a definition of probable; but it never is, and need not be, so taken—and consequently the question of the meaning of the word and of the justice of the reasoning still remains.

From such reasoning to the theory of probability and the various calculations that are based upon it seems a long step: yet both are grounded in the same logical formation.

The Laplace theory of probability is based upon the common observation that judgments about probability must somewhere involve an element of uncertainty. But Laplace made the serious error of basing the judgment wholly on ignorance in those cases in which no information was to be had. Thus, before a coin is flipped the probability that it will "come heads" is equal to the probability that it will "come tails"—because we have no information at hand which leads us to believe that it is more likely to behave one way than the other. The absurdity inherent in such reasoning has been brought out by Edgeworth, who asked if the probability is fifty-fifty that there are black beetles on the moon, merely because there is no information about it either way. It appears then that probability somehow involves the right balance of ignorance with knowledge. But what is such a right balance?

Suppose the follower of the Laplace theory flips his coin, say a hundred times, and that it falls heads fifty-four times out of the hundred, the extent of his ignorance is that he does not know how it will fall the next time he flips it; the extent of his knowledge, that it has fallen heads fifty-four times out of a hundred. Basing his judgment now on the knowledge that he has available, he judges that the probability that it will fall heads the next time he flips it is fifty-four

in a hundred. Here is a certain balance of ignorance and knowledge. But we may still seek for the warrant for his judgment—does he invoke the principle that the next hundred times the coin is flipped it will behave as it did during the hundred that he has already examined? or does he only have a feeling, a "hunch" as the slang has it, that because it has behaved in a certain way in one set of experiments it is likely to behave similarly in another set? and is the word *probable* only a cover for his hunch?

In the still simpler case, where any two properties or phenomena, *A* and *B*, are found associated or in any other relation, and are found so repeatedly while no counter-instances are observed, then by establishing a certain balance of knowledge and ignorance, one might reason, as Mr. Bertrand Russell does reason, that "The greater the number of cases in which a thing of the sort *A* has been found associated with a thing of the sort *B*, the more probable it is (if no cases of failure of association are known) that *A* is always associated with *B*."[1] Mr. Russell thinks that the mere enumeration of instances is sufficient to establish a probability—an opinion against which there are a number of cogent arguments. As this question, however, is not in the direct path to the question of the nature of probability, and as a definite answer to it is given by an answer to that question (as will be shown), it need not be further agitated at the moment. Mr. Russell also believes that "a sufficient number of cases of association of *A* with *B* will make it nearly certain that *A* is always associated with *B*, and will make this general law approach certainty without limit."[2] This view seems to be nothing but his own personal reaction toward the recurrence of the association of *A* with *B*, and as such it is the result of introspection, a piece of psychology, of autobiography. In *The City of Dreadful Night*, James Thomson writes:

> "But when a dream night after night is brought
> Throughout a week, and such weeks few or many
> Recur each year for several years, can any
> Discern that dream from real life in aught?
>
> "For life is but a dream whose shapes return,
> Some frequently, some seldom, some by night
> And some by day, some night and day: we learn,
> The while all change and many vanish quite.
> In their recurrence with recurrent changes
> A certain seeming order; where this ranges
> We count things real; . . ."

If we overlook the metaphysical distinction between the real and the true, this seems to be sound psychology and there seems to be as much

[1] Russell, *The Problems of Philosophy*, pp. 104–105. See also this JOURNAL, Vol. XIII., pp. 243–245.

[2] Russell, *loc. cit.*, p. 104.

in it as there is in the views of Mr. Russell on induction, and no less. Both may be taken as descriptions of the manner in which we come to be in the possession of a certain opinion, but neither equips us to defend it.[3]

It may be true, as a part of our biography, that we give voice to a "hunch" when we express a judgment of what is probably true, but we need not necessarily have that kind of a biography.

I. The Will in Induction

C. S. Peirce has pointed out that if an array of all the different possible samples, which might be chosen from any collection of any constitution whatever, be made, then (1) there will be a greater number of samples which agree approximately in their constitution with the constitution of the collection from which the samples are taken than there will be of samples which do not agree approximately, and (2) the greater the number of such samples in a collection of samples the closer the approximation of the constitution of the collection of samples to the constitution of the collection from which the samples are taken.

To illustrate, suppose a collection which consists of n objects, O_1, O_2, $O_3 \cdots O_n$, and suppose that two objects are chosen for each sample; how many different possible pairs could be chosen? O_1 may be paired with O_2 and O_3 and so on until it is paired with O_n, yielding $n-1$ pairs. O_2 may be paired with O_3 and O_4 and so on until it is paired with O_n, yielding $n-2$ new pairs, none of which is included in the earlier set. O_x may be paired with each of the objects which is numbered with a number larger than x, yielding $n-x$ pairs, none of which is included in any of the earlier sets. O_{n-1} may be paired with O_n, yielding one pair or $n-(n-1)$ pair. Then the number of the different possible samples of two from a collection of n objects is the sum of the numbers of each of these sets, namely, $n^2-(1+2+3+4+\cdots n)$.

Suppose, now, a collection consisting of n black balls and n red

[3] In this connection a comment of Peirce is interesting. (*Studies in Logic by Members of the Johns Hopkins University*, Boston: Little, Brown and Company, 1883, p. 175.) "The Abbé Gratry believes that the tendency toward truth in induction is due to a miraculous intervention of Almighty God, whereby we are led to make such inductions as happen to be true, and are prevented from making those which are false. Others have supposed that there is a special adaptation of the mind to the universe, so that we are more apt to make true theories [laws?] than we otherwise should be. Now to say that a theory such as these is *necessary* to explaining the validity of induction and hypothesis is to say that these modes of inference are not in themselves valid, but that their conclusions are rendered probable by being probable deductive inferences from a suppressed (and originally unknown) premise."

balls. The number of all the different possible samples of two will be $(2n)^2 - (1+2+3+\cdots 2n)$. The number of the possible samples of two which are either both black or both red will be $n^2 - (1+2+3+\cdots n)$, and the number of both of these, that is, of the different possible pairs which do *not* represent in their constitution the constitution of the original collection, will be $2n^2 - (2+4+6+\cdots 2n)$. Then the number of the different possible samples which *do* represent in their constitution the constitution of the original collection will be $[(2n)^2 - (1+2+3+\cdots 2n)] - [2n^2 - (2+4+6+\cdots 2n)] = 2n^2 - (1+3+5+7+\cdots 2n-1)$. This number exceeds the number of non-representative pairs by n. Therefore, if, from a collection consisting of an equal number of black balls and of red balls, all the different possible samples of two be taken, the number of the samples which truly represent in their constitution the constitution of the original collection will exceed the number of non-representative samples by a number equal to the number of balls of either color.

This same property of collections with reference to samples taken from them may be demonstrated for any collection of any degree of complexity and for samples consisting of any number of objects. To be sure the situation may arise where no sample could possibly represent the collection, as, for instance, if samples of two were taken from a collection containing seventy-seven black balls and thirty-three red balls; yet it is true that the collection of different possible samples will approximate in its constitution, as its size increases, more and more nearly to the constitution of the original collection, and the approximation will reach coincidence if enough samples are taken.[4]

[4] Although the reasoning here is deductive in its nature, I found it expedient in the course of the thinking to perform several simple experiments which served to bring the issues clearly before the mind. In one, a round-bottom, long-neck glass flask of a liter capacity, such as is used in chemical experiments, was taken. Within the flask were a number of balls of cork, some red, some black, of such size that they fell freely through the neck of the flask. The neck of the flask was equipped with a cork stopper, bored, through which a glass plunger operated. This carried, on the end within the flask, a cylinder of cork which acted as a piston and could be adjusted so that, when the flask was inverted, any desired number of the cork balls, up to four, would fall into the neck and could be observed. This device provided a means of securing rapidly a large number of samples. Two red and two black balls were put inside of the flask, and samples of two were taken. After 10 samples had been taken, the collection of all the samples contained 5 reds and 15 blacks. After 25, 20 reds and 30 blacks; after 50, 46 reds and 54 blacks; after 100, 99 reds and 101 blacks. If the apparatus had been constructed so that it positively did not discriminate among all possible samples, then the collection of the samples would represent in its constitution the constitution of the collection of the balls within the flask. After these 100 samples had been taken the approximation was very good. After 150 samples had

We may therefore make the conclusion that, *if samples are chosen from a collection by a method which does not discriminate among the different possible samples, then the collection of the samples so chosen will approximate, as its size increases, more and more closely to the constitution of the collection from which the samples are taken.* This conclusion is demonstrably true, and probability has not yet been introduced.

From these considerations C. S. Peirce concluded that a collection of samples chosen at random *probably and approximately* represents the collection from which the samples are chosen.

If, from the samples we wish to draw inferences relative to the constitution of a collection which is complex in its inward constitution, inferences regarding a considerable number of different characters present or absent in the objects which constitute the collection, as is commonly the case when we make judgments relative to statistical probability, then the degree of approximation is an important *practical* matter. If, as is the case in the inductive inferences of science, we are interested only in a single character or a single relation which is present or absent throughout the collection, then the approximation becomes *is* or *is not* and is readily surpassed if sufficient samples are taken. The question of the degree of approximation, whether in the inductions of science or in the probabilities of the insurance underwriter, disappears if *enough* samples are taken —however many enough may be. It is, in any case, not a logical question; and in the discussion which follows it is assumed that a sufficient number of samples has been chosen and the word "approximately" will not be used. When a judgment of probability is mentioned it is assumed that it is based already on the consideration of so many samples that more samples will not cause any alteration in the judgment. Such a collection of a sufficient number of samples will be referred to constantly hereafter merely as a "collection of samples."

Peirce says: "The instance must be drawn at random. Here is a maxim of conduct."[5] "A random sample is one taken according to a method that would, in the long run, draw any one object as often

been taken, there were in the collection of samples 146 reds and 154 blacks. Of the 150 samples, 23 were black pairs, 19 red pairs and 108 black and red. I can conclude by the reasoning developed in this paper that the hypothesis is probably true that with this apparatus there was a slightly greater tendency for the black balls to fall into the neck of the flask than there was for the red to do so. This hypothesis is verified both by the fact that there were more black pairs than red pairs and by the fact that the representative pairs amounted to more than four sixths of all the samples, for a method of sampling which did not discriminate among the different possible samples would have chosen—in accordance with the theorem above—four representative pairs out of every six.

[5] Peirce, *loc. cit.*, p. 129.

as any other."[6] "Yet I am willing to concede, in order to concede as much as possible, that when a man draws instances at random, all that he knows is that he *tries* to follow a certain precept."[7]

If, from a collection of objects, we make a "collection of samples," a collection, be it noted, sufficiently large to settle absolutely all question of approximation, we still do not know that the collection of samples truly represents the collection from which the samples were taken. We do know that it would represent it if the samples were chosen by some method which does not discriminate among all the possible different samples. We do not know whether our method of choosing fulfils this criterion or not, and we never can know. We know that this criterion can not be fulfilled unless the samples are chosen at random. Moreover, as a sort of clause in the contract, the samples must be so chosen that they are not antecedently likely to conform to the law which is being tested. There may be other criteria which must be followed if we wish to make no discrimination, criteria of which we have no cognizance at present. We know only that if we follow all the criteria of which we know, and choose samples by a method which, *to the best of our knowledge and intent,* makes no discrimination, then the "collection of samples" so chosen *ought* to represent the collection from which the samples were taken.

Probability then depends upon our ignorance of the criteria which will insure perfect impartiality in sampling, and involves our *intent* not to discriminate among possible samples. Probability is only another name for this intent. The principle of induction may be formulated; and, as we now have a definition of probable, the principle of induction has been demonstrated to be true.

THE PRINCIPLE OF INDUCTION.—*A collection of samples, chosen by a method which intends to make no discrimination among all the different possible samples, probably represents in its constitution the constitution of the collection from which the samples are taken.*

If we designate a collection of samples chosen in this way as a "collection of fair samples,"[8] then the principle of induction may be expressed thus: *a collection of fair samples probably represents in its constitution the constitution of the collection from which the samples are taken;* and the expression, a "collection of fair samples," will be used in this sense in the discussion which follows.

The validity of judgments of probability depends upon the will to be fair, impartial, and without discrimination.[9] Without this will

[6] *Ibid.*, p. 157.

[7] *Ibid.*, p. 176.

[8] It will be noticed that "fair sample" here has a slightly different connotation from that which it has in the writings of Peirce and of Royce.

[9] Concerning the scientist's will to be honest methodology has much to say, but there is no place for it here.

we can have no inductive inference and—it is not too much to say it —no scientific method, for most of the methods of reasoning of science may be demonstrated to be consequents of the principle of induction.

II. Antecedent Likelihood

One of the consequences of our principle of induction is this, that a collection of fair samples justifies us in making an inference *only* as to the probable constitution of that collection from which the samples are *fair*.

An eminent logician, in arguing for the mere enumeration of instances as the basis of inductive inference, has said, in answer to a question, that the observation that each of the swans which are bred from a single pair of swans in a man's back yard is white, is sufficient evidence to permit that man to make the inference that all swans are probably white. Provided that the man has observed "a collection of fair samples" of swans which are bred from a single pair of white swans, and has found them all white, he is justified, as we know, in making the induction that probably all swans which can be bred from the two swans are or will be white. But beyond that he must not go. Moreover, the examination of further swans from the flock in his back yard will not help his case in the least—for these, by our principle, are cases which are now likely to conform to the law which he desires to establish. If he roams about his countryside and looks for swans and observes that every swan that he sees is white, then he may make the induction—though he can not be sure that he has seen all the swans in his neighborhood—that all the swans in his neighborhood are probably white; and so for county, his state, the nation, or the continent. If he wishes to make the induction that all swans on the planet are probably white, he must look for swans in out-of-the-way corners of the world, in those places where it is not antecedently likely that swans will be white. Unless he does so his generalization, which applies only to that collection of swans among all the possible different samples of which he intended not to discriminate, will be valid only for a part of all the swans. Let him examine especially the swans of Australia, where there are black swans, or the swans in Los Angeles.

To establish a law which is probably *valid for all*, samples must be chosen which are not antecedently likely to conform to the law which has already been established for some special collection which is a part of the all.

III. The Method of Verification in Science

In addition to his contributions to the *logic* of induction, Peirce also had something to say about certain psychological considerations,

traits of mind, which it involves. His views may perhaps be indicated fairly yet briefly by the following formulation.

Observation: A is B.

Retroduction: Probably all A's are B's.

Verification: A collection of fair samples of A's is made, and each A is found to be a B.

Induction: Probably all A's are B's.

The interesting thing is the retroduction (called also by Peirce the "abduction"); yet in the case where the probable constitution of a collection is inferred from the known constitution of a collection of fair samples, there is no necessity for it. Any logical mind, a mind let it be supposed which never makes a guess and never has an intuitive glimpse or flash of suspected truth, but devotes itself wholly to the elaboration of necessary consequences, could perfectly well by our principle derive the *induction* from the *verification* alone, and, in so far as it is merely logical, could not fail to do so. But retroduction is exceedingly important when considered in connection with the so-called Baconian method or the method of working hypotheses.

Observation: F (fact) is observed.

Retroduction: H (hypothesis) explains F.

Verification: H explains also F_1, F_2, F_3, *etc.* (other and different fair sample facts), which are sought out and observed.

Induction: H is probably true.

The fact that the working hypothesis is probably true will be demonstrated later to be a consequence of the principle of induction, and it need cause us no further concern at the moment. But the matters which depend upon the primary choice of the hypothesis are also important in their bearing on the method of science.

The number of hypotheses which might serve to explain a given fact is well-nigh infinite: the number of those which are actually considered and tested by the scientist is very small. As an historical fact the scientist exhibits an almost uncanny facility in selecting the right hypothesis from among the infinite of otherwise equally plausible hypotheses. Kohlrausch said of Faraday, "Er riecht die Wahrheit." Ernst Mach says,[10] "Every experimenter can daily observe in himself the guidance that instinctive knowledge furnishes him. If he succeed in abstractly formulating what is contained in it, he will as a rule have made an important advance in science. . . . Indeed, it is perfectly certain that the union of the strongest instinct with the greatest power of abstract formulation alone [?] constitutes the great natural inquirer." Charles Peirce writes,[11]

[10] Ernst Mach, *The Science of Mechanics* (tr. by Thomas J. McCormack), p. 27.

[11] C. S. Peirce, "A Neglected Argument for the Reality of God," *The Hibbert Journal*, October, 1908. Quoted passage, p. 106. Also Peirce, *Studies in*

"Modern science has been builded after the model of Galileo, who founded it on *il lume naturale.* That truly inspired prophet has said that, of two hypotheses, the *simpler* is to be preferred; but I was formerly one of those who, in our dull self-conceit fancying ourselves more sly than he, twisted the maxim to mean the *logically* simpler, the one that adds the least to what has been observed, in spite of three obvious objections: first, that so there was no support for the hypothesis; secondly, that by the same token we ought to content ourselves with simply formulating the special observations actually made; and thirdly, that every advance in science that further opens the truth to our view discloses a world of unexpected complications. It was not until long experience forced me to realize that subsequent discoveries were every time showing I had been wrong, while those who understood the maxim as Galileo had done, early unlocked the secret, that the scales fell from my eyes and my mind awoke to the broad and flaming daylight that it is the simpler hypothesis in the sense of the more facile and natural, the one that instinct suggests, that must be preferred; for the reason that unless man have a natural bent in accordance with nature's, he has no chance of understanding nature at all."

The source of the scientist's intuition is doubtless to be found in his wide experience of the phenomena with which he deals. He has a facility, resulting from this intuition, in selecting the right hypothesis. Yet hypotheses alone are not the only result of scientific activity, and intuition does not "alone constitute the great natural inquirer." Science has its theories—which are statements of the *conditions without which* certain facts could not be. Theories are implied by facts, and for their production only the coldest logical sense is needed. The very "spontaneous conjectures of instinctive reason" which have helped the scientist in his search for hypotheses have also hindered him in his search for theories. He has frequently been led to believe that the facts imply things which are really not implied by them. He has accepted false theories and has been slow to accept new and true ones.[12]

Logic, p. 108, "Nature is a far vaster and less clearly arranged repertory of facts than the census report; and if men had not come to it with special aptitudes for guessing right, it may well be doubted whether in the ten or twenty thousand years that they may have existed their greatest mind would have attained the amount of knowedge which is actually possessed by the lowest idiot" (p. 181). "Side by side, then, with the well-established proposition that all knowledge is based on experience, and that science is only advanced by the experimental verification of theories [hypotheses?], we have to place this other equally important truth, that all human knowledge, up to the highest flights of science, is but the development of our inborn animal instincts." I say, not *all!*

[12] For a fuller discussion of this point, with instances from the history of science, see "Intuition in Science," *University of California Chronicle,* April, 1917.

IV. The Supposed Assumption in Science of the Uniformity of Nature

In his *Introduction to Science* J. Arthur Thomson says (p. 77): "There is one fundamental postulate underlying scientific procedure—a postulate which is verified with every fresh step. It is the postulate of the Uniformity of Nature. This, which may be analyzed into a number of postulates, means that for our human purposes there is stability in the properties of things, that the same situations are continually recurring, that there is a routine in the order of nature—a routine without gaps or interpolations, in which every event is determined by antecedent events."

Peirce says on the contrary:[13] "That there is a general tendency toward uniformity in nature is not merely an unfounded, it is an absolutely absurd, idea in any other sense than that man is adapted to his surroundings. For the universe of marks is only limited by the limitation of human interests and powers of observation. Except for that limitation, every lot of objects in the universe would have . . . some character in common and peculiar to it. Consequently, there is but one possible arrangement of characters among objects as they exist, and there is no room for a greater or less degree of uniformity in nature. If nature seems highly uniform to us, it is only because our powers are adapted to our desires."

Whether men of science believe in the uniformity of nature, it seems hardly worth while here to inquire, for many of them have confessed it, and many writers on the method of science have believed it. We measure the specific gravity and melting point and other "constants" of one pure sample of some substance and blithely suppose that our measurements are correct (within the limit of error) for all pure samples of the same substance. Yet a knowledge of the status of such a belief is important for an inquiry into the basis of inductive inference, and consequently important for an understanding of scientific method. Is it merely a "postulate," an assumption, a premise granted in order that the scientist may make progress in his reasoning? or is it perhaps a popular error, a belief that is really

[13] Peirce, *Studies in Logic*, p. 178. Doubtless one reason for Peirce's animosity toward the belief in the uniformity of nature is to be found in his belief that the laws of nature are themselves undergoing evolution—a belief based upon his exact gravitational measurements, and consequently developed in his mind first with reference to the law of gravitation. We now know that the law of gravitation as formulated by Newton *never was right*. R. C. Tolman has shown (*Physical Review*, N. S., III., 244, "The Principle of Similitude") that the attractive force between two masses can not possibly be directly as the product of the masses and inversely as the square of the distance between them in any world where (as seems to be the case in this one) the velocity of light is absolute and the charge of the electron is absolute.

not necessary for science? or is it supported by evidence, a belief derived from some earlier assumption or experience?

That there is a seeming constancy in the observed properties and relations of things, that there is uniformity in "the universe of marks," no observant person will deny. The fact that the data of experience appear time after time in the same order and with the same relations among themselves is itself a fact of experience. If, now, we are permitted to make an inductive generalization, we may judge that the various kinds of experience which have occurred in certain orders *probably* always occur in those orders. Since experience is the *Ausgangsmaterial* of all science, this is as much information about the uniformity of nature as science will ever need. This is the *law* of the unformity of nature. As such it is a true statement of probability. It is not an assumption.

To point out, as Peirce has done, that the universe of marks is limited by human interests and powers of observation, does not in any way affect the validity of the law of the uniformity of nature. The law, of course, applies only to palpable nature; but that is all that the laws of science can claim to deal with, anyhow. Science uses hypotheses and theories in its treatment of inaccessible nature and of impalpable attributes.[14] Moreover, if scientific method is to have a sound basis in epistemology, then its laws must necessarily refer only to the kinds of things that are given in experience.

But inductive inference itself involves one assumption, and without it there can be no law of the uniformity of nature, and no other law. The principle of induction is based upon our knowledge of the relation between the constitution of a collection of samples and the constitution of the collection from which the samples are taken. If, then, we collect the data of experience and proceed to generalize upon them, we have tacitly made the assumption that *there is a collection of real objects which are in their marks what they are absolutely* (and all our piety and wit can neither make nor mar them). The assumption may be expressed in a manner which possibly savors less of metaphysical connotations: *there exists a real collection of potential experiences, each member of which is what it is absolutely.*[15] This

[14] The knowledge of the inaccessible qualities of nature, as, for instance, of the atomic constitution of matter, involves some delicate metaphysical considerations. One may say at least that the experience of isomeric substances gives also, in whatever sense that it gives the substances themselves, *implicitly* the information that the substances are atomic in structure. The judgment that "that" (object of experience) is red has no more warrant than the judgment that "these" (objects of experience, isomers) are atomic. Thus one is led to the question of the nature of the objects which are themselves the subjects of judgments which are warranted by experience and of the application of such judgments in general.

[15] The interesting inquiry into the exact scope of the *will* in a universe constructed on this plan is not undertaken here.

assumption is involved also in the other, and as I believe, inadequate, formulations of the principle of induction—Russell's, for instance. If one has a "hunch" that A and B are probably always associated, he presupposes the collection (which is not yet given in experience) in which the association to be given will occur. In this paper I shall not take it upon myself either to defend this assumption or to examine its metaphysical consequences. I only point out that it is the fundamental postulate of all inductive thinking and of much of natural science.

V. The Calculus of Fair Samples

The calculus of fair samples is devoted to the development of the consequences of the principle of induction. Between it and the algebra of logic our manner of knowing all things except the metalogical and the other, ordinary, information of experience is comprehended.

Let a bold-faced capital **S** be used to denote a collection of fair samples (as defined above); let it be followed by the name in parenthesis of the character or characters possessed by the samples. Let the symbol π be used to denote probability.[16] If the universe of discourse is understood to be the collection from which the samples are *fairly chosen,* then the principle of induction may be symbolized.

$$\mathbf{S}(a) = \pi(a); \tag{1}$$

which means that a collection of fair samples which present the property a is the same as the probability that a is present in every member of the collection from which the samples are chosen. Likewise we have, where R is any relation—

$$\mathbf{S}(aRb) = \pi(aRb). \tag{2}$$

Thus it appears that the "association of A with B" which was used by Mr. Russell in his statement of the principle of induction is only a special case of the more general aRb. R may denote the relation of logical addition or of logical multiplication, giving us $\mathbf{S}(a+b) = \pi(a+b)$, a collection of samples in each of which either a or b is present is the same as the probability that either a or b is present in

[16] Other symbols are as in the algebra of logic; $-<$ for implies, 1 for true, 0 for false, *etc.* No effort is here made to use symbols in the same manner in which they are used in the symbolic logic of classes. The intelligible but discursive statement which I have called the principle of induction seems to me to be equally intelligible if expressed $\mathbf{S}(a) = \pi(a)$, and the effort here is merely to express certain of its intelligible consequences in intelligible symbols for the sake of the logical connections that seem to be thus rendered more obvious. To express these relations in terms of the conventional algebra of classes I already know is not easy: it will be a task for the future.

every member of the collection from which the samples are taken, and $\mathbf{S}(a, b) = \pi(a, b)$, a collection of samples in each of which both a and b are present is the same as the probability that both a and b are present in every member of the collection from which the samples are taken. The case in which R is the implication relation is especially important, for it leads to the proof of the validity of the method of verification. Let H stand for an hypothesis, then

$$(3) \qquad \mathbf{S}(H -< 1) = \pi(H -< 1),$$

But $$(H -< 1) = (H = 1) = (H).^{17}$$

Hence $$\mathbf{S}(H -< 1) = \pi(H).$$

An hypothesis which implies the true (and that which is experienced is taken in science as true) in a collection of fair sample cases is the same as the probability that the hypothesis always implies the true in the universe of discourse, is the same as the probability that the hypothesis is true.

When a particular fact implied by an hypothesis has been given in experience, we have at hand one case in which the hypothesis has implied the true. By the general law of the uniformity of nature it is antecedently likely that other facts like the first, and equally implied by the hypothesis, may be found; but these will now be without value for establishing the probability of the hypothesis. Other facts of wholly different kinds must be sought out, of such kinds that each kind is implied by the hypothesis. Thus, if we hold the hypothesis that the barometer column is supported by the weight of the atmosphere and see, moreover, that our hypothesis implies that the height of the barometer column would be less at the top of a mountain than at sea-level, then, if we climb a mountain with our barometer and observe that its height is less than it was when we left the foot of the mountain, we have found one case in which our hypothesis implies the true. If we carry our barometer to the summits of other mountains, because of the very nature of the principle of induction, we have not improved the status of our hypothesis in the least. We must seek out other kinds of situations; we may carry our barometer below sea-level into a deep mine, or we may put it under an air pump. The numerous verifications of an hypothesis are determined by the ability of the hypothesis to explain *different* situations.

Since the ordinary algebra of logic applies to collections and

[17] In the ordinary algebra of logic there is nothing which corresponds to $(H -< 1) = (H = 1) = (H)$. This piece of symbolism may be regarded as shorthand for the logical truism that a proposition which invariably implies the true is itself true. See this JOURNAL, Vol. XIV., p. 96.

since collections are the subject-matter of the calculus of fair samples, we have—

(4) If $a \multimap < b$, then $\mathbf{S}(a) \multimap < \mathbf{S}(b)$, and $\pi(a) \multimap < \pi(b)$.

(5) $\mathbf{S}(a), \mathbf{S}(b) = \mathbf{S}(a, b) = \pi(a, b)$; and $\pi(a), \pi(b) = \pi(a, b)$.

(6) $\mathbf{S}(a) + \mathbf{S}(b) = \mathbf{S}(a+b) = \pi(a+b)$; and
$\pi(a) + \pi(b) = \pi(a+b)$.

From the principle of induction we have immediately the theorems—

(7) $$\mathbf{S}[\pi(a)] = \pi[\pi(a)] = \pi^2(a).$$

(8) $$\mathbf{S}[\pi^2(a)] = \pi[\pi^2(a)] = \pi^3(a), \textit{ etc.}$$

And it appears that we may speak with justice of the *powers of probability,* for the status of the probably probable is different from that of the merely probable. For, if by the examination of fair samples from a defined collection we establish the truth that probably every member of the defined collection is a, and if then we proceed to examine as samples a number of such defined collections all of which are within some larger defined collection and find that for each of these smaller collections, which as samples we have examined, it is probable that every member is a; then, though we may not conclude that every individual member of each of the smaller collections and hence of the larger collection is probably a—for we have not examined *every one* of the smaller collections, still we may conclude that it is *probably probable* that every member of each of the smaller collections and hence of the large collection is a. And so for any power of probability.

The greater part of the working hypotheses of science is *probably probable*—for in most cases the validity of the implication of the facts by the hypothesis is itself dependent upon some law of nature which is probably true. The situation may be symbolized.

(9) If aRb, then $H \multimap < 1$; but $\mathbf{S}(aRb) = \pi(aRb)$,
and $\pi(aRb) \multimap < \pi(H \multimap < 1)$;

Hence

$$\mathbf{S}[\pi(H \multimap < 1)] = \pi[\pi(H \multimap < 1)] = \pi^2(H \multimap < 1).$$

A collection of fair sample cases in each of which the hypothesis probably implies the true is the same as the probable probability of the truth of the hypothesis.

The hypothesis that salts in aqueous solution dissociate into posi-

tively charged metal ions and negatively charged acid ions implies the phenomena of electrolysis, if the law of electrostatics (which of course is probable) that unlike charges attract one another, be taken as true, it implies the abnormally large boiling-point raising and freezing-point lowering and osmotic pressure which are shown by salt solutions, if the laws (again probable) which connect these things with concentration be taken as true, and so on. The hypothesis of electrolytic dissociation is probably probable.

A theory in science is an opinion which is somehow implied by the facts; and theory may be defined, $F —< T$, fact implies theory. The phenomenon of interference implies that the particular light of which the phenomenon is observed is a kind of wave motion. This theory, as related to the particular instance, is true. If now I examine a collection of fair samples of light and find interference in each case, I may conclude that it is probable that all light is wave motion. This is a case of Theorem 4 above. In many cases, however, the implication of the theory by the fact is only probable and depends for its validity upon the validity of some law. Thus

(10) If aRb, then $F —< T$; but

$$\mathbf{S}(aRb) = \pi(aRb), \quad \text{and} \quad \pi(aRb) —< \pi(F —< T);$$

Hence

$$\mathbf{S}(aRb) —< \pi(F —< T) —< \pi T,$$

where F is a fact, *i. e.*, a true particular. From the principle of the syllogism, namely, $(a —< b)(b —< c) —< (a —< c)$, we have other theorems.

(11) If $(a —< b)(b —< c)$, then $\pi(a) —< \pi(c)$.

(12) If $\pi(a —< b)(b —< c)$, then $\pi(a) —< \pi^2(c)$.

(13) If $(a —< b)$, $\pi(b —< c)$, then $\pi(a) —< \pi^2(c)$.

(14) If $\pi(a —< b)$, $\pi(b —< c)$, then $\pi^2(a —< c)$,
or $a —< \pi^2(c)$, or $\pi(a) —< \pi^3(c)$.

These theorems and others are used in the production of the theories of science; and there are theories which are true, probable, probably probable, and so on.

The fourteenth theorem is illustrated by reasoning which has been used by the climatologist, Ellsworth Huntington,[18] in connection

[18] Huntington, *The Secret of the Big Trees.* Publication of the U. S. Department of the Interior. "In regions having a strongly marked difference be-

with the *Sequoia washingtoniana* of the Sierra Nevadas. If it is probable that the number and sequence of the annual rings indicate the number and sequence of the years of age of the tree, and if it is probable that a sequence of unusually narrow annual rings indicates a sequence of dry years, then it is probably probable that a sequence of narrow annual rings corresponding to the period about 870 years before Christ indicates that there was a drought in California at about the time that there was famine and drought in Palestine in the days of Elijah.

The probably true theory of science is distinctly a different kind of belief from the probably true hypothesis. The hypothesis is only one of the many possible explanations of the facts: the theory *in the light of all of the knowledge of science* is the only possible one; and if the laws of nature are true, then the theory also is necessarily true. Though some theories are probable, though no hypotheses are true, yet the faculties of mind requisite for the production of the two kinds of belief and the motives behind their use are widely different.

The foregoing are but a few of the theorems of the calculus of fair samples, and more will be developed in the future. The calculus gives us the means of defining exactly the various kinds of scientific belief, laws, hypotheses, theories. It equips us with the apparatus for that "stock-taking" in science for which Huxley pleaded so eloquently.

VI. Statistical Probability and Degree of Probability

Probability is the name for our intent to choose samples fairly. Our intent is an effort to do the best that we can under the limitations of our ignorance. We never can be sure that we have examined every member of the collection about whose constitution we wish to make an inference. We never can be sure that the samples which we have examined have been chosen by a method which does not discriminate among possible samples. We know, however, that we might conceivably choose so many samples that the further examination of samples will not cause us to alter our inference. This point marks the limit of available knowledge. Yet at this point our knowledge is only knowledge of the *probable*—for we are not, and never can be, "cock-sure" of our samples. *Probability, therefore, does not approach certainty without limit.* An inference may conceivably be one hundred per cent. probable. If it were, it would still not be true.

tween summer and winter it is well known that trees habitually lay on a ring of wood each year. . . . And it is now established that in regions with cold winters and dry summers the thickness of the annual layers of growth gives an approximate measure of the amount of rain and snow" (pp. 10–11).

It seems reasonable to suppose that one hundred per cent. probability is a thing that is attainable only in ideal. However, the fact that it would, if attained, still not be certainty, involves some interesting consequences—especially in the use of words. A high probability is a probability which will be altered but slightly by the further examination of samples. A low probability will be altered more widely; but even the low probability has been founded on the examination of *some* samples and has already begun to approximate to the highest probability which may be attained. Our inductive knowledge is not to be tabulated on the scale of impossibility—improbability—probability—certainty, as some logicians have held; but rather—if the present formulation of the principle of induction is correct—on the scale of ignorance—knowledge of probability—knowledge of the highest attainable probability. We never have certainty of the constitution of a large collection in the sense that we have certainty of the nature of the particular sample.

Suppose that I am given a box containing balls, black or red; and suppose moreover that I agree not to open the box. There is a glass window in its side through which I may see one ball and only one. I am asked to make an estimate of the constitution of the collection of balls. If now I shake the box and look through the window and see a black ball, I am justified in making the judgment that there is a slight probability that all the balls in the box are black. The probability is slight because it is based on meager evidence. But when I say that the probability is slight that all the balls are black, I do *not* mean that it is highly *improbable* that all the balls are black—a meaning which is sometimes attached to the expression. The probability is slight, but it is none the less genuine. This use of the words is the consequence of the nature of our warrant for making probable inferences. If now I shake the box many times and examine many samples, and if I find that each sample is a black ball, then I may justly make the inference that it is highly probable that all the balls in the box are black. On the other hand, if I find that seven tenths of the many samples are black, then I may infer that it is highly probable that seven tenths of all the balls in the box are black. I have absolutely no warrant for so perverting the language of my fathers as to say that it is seven tenths probable that the next ball I examine will be black. I could have said that (if at all) with equal propriety after the examination of the first ten samples. At that time my warrant for the inference was small and the probability was small; now my warrant is large and the probability is large. At that time it would have been correct for me to infer that the probability is small (but genuine) that seven tenths of the balls in the box are black: now I may infer of the same thing that the probability

is large. I might, by continuing to examine samples, conceivably reach the point at which further samples would be without effect on the nature of my inference. But if I should by any chance reach this point I would not know it. All I could infer would be that the probability is great. It follows, therefore, from our principle of induction that the degree of probability is not a thing which submits to being expressed exactly in numbers—we may speak of low probability or high, but we must not speak of probability as a ratio.

We must not say that the probability is fifty-fifty that a certain collection has a specified constitution: we must say that the probability is that a certain collection has a fifty-fifty specified constitution. Accordingly, if $F(a)$ denotes the fraction of all the fair samples which present the property a, we have for statistical probability the expression

$$(a) \qquad \mathbf{S}F(a) = \pi F(a).$$

If a fraction F of the objects in a collection of fair samples possesses the property a, then it is probable that a is possessed by the fraction F of the objects in the total collection from which the samples were chosen.

There will be similar expressions for the logical products and the logical sums of different properties probably present in corresponding fractions of the *same* collection.

$$(b) \qquad \mathbf{S}F_1(a) \cdot \mathbf{S}F_2(b) = \mathbf{S}F_1F_2(ab) = F_1F_2(ab).$$

If it is probable both that half of all the musicians use tobacco and that one quarter of all the musicians wear whiskers, then it is probable that $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$ of all the musicians both use tobacco and wear whiskers.[19]

$$(c) \qquad \mathbf{S}F_1(a) + \mathbf{S}F_2(b) = \mathbf{S}[F_1(a) + F_2(b)] = \pi[F_1(a) + F_2(b)].$$

[19] It might be objected that this theorem is not necessarily true for the reason that the half of the musicians who use tobacco might possibly be an isolated group none of whom wears whiskers. Such a state of affairs, because of the very nature of the fair sampling process, would lead us, if it existed, to the inference that it is probable that a certain half of all the musicians, namely, that half which is found among those who do not wear whiskers, all use tobacco. It would be antecedently more likely that a musician who wears whiskers does not use tobacco than that he does. Only if there are no observations which make any correlation of whiskers and the use of tobacco antecedently likely is it possible to have two genuine inductive inferences, regarding the use of tobacco and whiskers among musicians, both of which have been founded on the examination of cases which are in no way antecedently likely to conform. If the inferences are valid, they have been founded on the examination of fair samples, and the musicians who are tobacco-users are distributed evenly, to the best of our knowledge and intent, among the collection of all the musicians, and the theorem is correct as stated.

If $$F_1 = f_1/D \quad \text{and} \quad F_2 = f_2/D,$$

then $$\mathbf{S}F_1(a) + \mathbf{S}F_2(b) = (\pi/D)[f_1(a) + f_2(b)].$$

If it is probable either that half of all the musicians use tobacco or that one quarter of all the musicians wear whiskers, then it is probable that of every four musicians either two use tobacco or one wears whiskers.

It would be desirable to be able to treat by the method of this calculus the logical sum and the logical product of different characters probably present in the corresponding fractions of *different* collections. Thus, if it is probable that half of the musicians use tobacco and if it is probable that a third of the poets carry walking-sticks, it would be interesting to know what probable inferences can be made (1) about those who are *both* poets and musicians, (2) about those who are *either* poets *or* musicians *or both*, and (3) about those who are *either* poets *or* musicians, *but not both*. Limitations of space prevent that this matter shall be developed here; moreover the requisite symbolism is intricate, and it may reasonably enough be questioned if symbolism adds anything here to the clarity of the thought. There are, however, two points that are important for the present consideration.

If we definitely knew that half of the musicians were tobacco-users and that a third of the poets carried walking-sticks and that these were distributed evenly among their respective collections, we could conclude that in the collection of those who are both musicians and poets one half use tobacco and one third carry walking-sticks, but we could still not draw valid inferences about the logical sums unless we knew in addition the relative sizes of the collection of all the musicians and of all the poets and the extent to which these collections overlap. Thus, if we knew that there were five times as many musicians as there were poets and that a seventh of all the poets were musicians (and consequently that one thirty-fifth of all the musicians were poets), we could conclude (1) that in the collection of those who are *either* musicians *or* poets *or both* five twelfths are tobacco-users and one eighteenth carry walking-sticks, and (2) that in the collection of those who are *either* musicians *or* poets, *but not both*, seventeen fortieths are tobacco-users and one twentieth carry walking-sticks.

If our information about the fraction of all the musicians who use tobacco and about the fraction of all the poets who carry walking-sticks is itself the result of an inductive inference—as is commonly the case—then our conclusions about those who are both musicians and poets are *probably true*. The further information

which is necessary in order that we can make inferences about the logical sums is ordinarily information that has been collected by statistical means, and is probable. Our inferences, therefore, about the logical sums of *different* collections are ordinarily probably probable.

The statistical probability which is the consequence of the principle of induction should, in the future, be correlated and compared with the various other theories of probability. In particular its connection with the "probability" which involves the *calculation of chances* should be determined.

The principle of induction is a consequence of certain properties of collections. As a consequence of these properties there are also certain rules which must be followed in applying the principle. As another, it appears that the only meaning which can be attached intelligently to the word *probable* is this—that the probable is that which would be true if we knew that our will to choose fairly among all possible samples was successful. The principle of induction derives its validity from the metaphysical assumption that there exists a collection of potential experiences each member of which is what it is absolutely. From this assumption the propriety of many of the methods of reasoning of the natural sciences may be demonstrated.

TENNEY L. DAVIS.

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A CLUE TO HOLT'S TREATMENT OF THE FREUDIAN WISH

I FIND myself in close agreement with Professor Watson's recent estimate[1] of Edwin Holt's brilliant little book on *The Freudian Wish*. "That Holt's wish is not Freud's" (p. 86[2]) and that there is —from my point of view, very fortunately—more of Holt than of Freud in the book (p. 90[3]); that we none the less are indebted to Holt for his emphasis on Freud's genuine contribution to general psychology; that Holt is justified in his effort to replace the sensation as unit of psychology (p. 86[1]); that his effort is not wholly successful and that, in particular, he does not present us with a satisfactory substitute for "Meynert's justly criticized scheme"—to all these conclusions I subscribe very cordially. I also agree with Mr. Watson that the book has a thoroughly "behavioristic tendency" (p. 90[4]), while yet "in many places" it has not rid itself from "subjectivism." But Watson, I think, has not found the clue to Holt's apparent see-saw between "behaviorism" and "subjectivism." Yet it lies ready

[1] This JOURNAL, Vol. XIV., pp. 85–92.

to hand: Holt rightly rejects the abstractions of the ordinary sensationalistic and ideistic psychology. When, however—in this study of moral behavior—he is discussing a social situation, then, though he neither acknowledges nor even realizes the fact, he is taking as primary unit of his psychology neither the reflex arc nor the wish, but rather the morally behaving, wishing, willing, self—the "mother" or "father" or "boy" of his masterly illustrations. Thus, to take almost random examples, when Holt says[2] that "the child is frustrated, but not instructed," or when he insists[3] "that *one* untruthful word of father or mother will often undermine the child's confidence forever," his teaching gains its force from the implicit reference to frustrated or confiding child and to truthful or untruthful parents, not as higher organisms of integrated reflexes, but as purposing selves in social relation.

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REVIEWS AND ABSTRACTS OF LITERATURE

Intercourse Between India and the Western World from the Earliest Times to the Fall of Rome. H. G. RAWLINSON. Cambridge, England: University Press; New York: G. P. Putnam's Sons. 1916. Pp. viii + 196.

However much "the meeting of East and West" has become a cant phrase, it retains a depth of fascinating mystery. For the student many great problems attend the contact of the two worlds in ancient times, especially if he seek to determine what religious and philosophical ideas in each were borrowed from the other. To our existing bibliography of Greek references to India, we can not, of course, look for important additions. Indian literature also has been pretty well ransacked for its meager allusions to the Mediterranean countries. But in excavation of old Helleno-Asiatic sites, the surface of the earth—metaphorically as literally—has hardly yet been scratched. The Greco-Buddhist sculptures of Gandhāra are indeed well known and many interesting proofs of Western influence have been found in Chinese Turkestan by Stein, Von Lecoq, and Grünwedel, but except on coins there is a deplorable lack of inscriptions or other writings that might afford us intimate knowledge of Alexander's border colonies. Every archeologist should pray his stone gods to soften the heart of the Amir of Afghanistan to permit exploration at Balkh, where the edifices of Bactria lie concealed.

[2] *The Freudian Wish*, p. 103.

[3] *Ibid.*, p. 113.

With much learning, but in a readable and agreeable style, Professor Rawlinson has pieced together our fragmentary knowledge from the foregoing and other sources. His volume is a handbook, not a compilation of original documents like the tomes of McCrindle. The extent of his citations and the account that he takes of recent studies in this by no means neglected field gives it, however, much value for reference purposes, as well as for passing perusal.

Its scope may conveniently be regarded as having a threefold division. His first inquiry concerns trade between Occident and Orient from earliest times to that of Alexander the Great, the Caravan and sea routes followed, merchandise carried, and occasional bits of reciprocal information which stole through. With Alexander our point of view shifts eastward. We learn what little we can of the colonies he established on the Indus, and take a much more satisfactory survey of the Maurya empire centered far down on the Ganges at Pātaliputra, where Megasthenes resided as ambassador from Seleukos Nikator. The descriptions surviving from this historian taken together with the Pāli literature and Asokan inscriptions give historical prominence to the century following Alexander, even though there is no proof that middle India was greatly affected by the Greek approach. Of note as a conclusion from recent diggings at Patna, is the increased emphasis placed upon Persian influences in the pre-Alexandrian period. But our knowledge of the frontier Greek colonies, Gandhāra and Bactria, is still tantalizingly deficient. We can trace their dynasties by their mintage, we can see them conquered successively by Hindu, Saka, and Yueh-chi Tartar, can witness the rise and decline of Greco-Buddhist art, yet the intellectual significance of this racial meeting must be supplied largely by imagination. Such a reaction of the self-expressive Greek to the self-repressive Buddhist might serve us as a laboratory study of the time-long, world-wide spiritual conflict. Evidences and presumptions indicate—to this Professor Rawlinson agrees—that the Greeks became Buddhists, the haughty, active westerner submitting his mind to the passive, eastern barbarian. But at about that time, with Tartar ascendency, Buddhism acquired a more outward and martial character. The mix-up is indeed bewildering and its hidden meanings to religious psychology are manifold. Rawlinson inclines to the view that the Gandhāra art is a work of sculptors imported from Syria or Anatolia, rather than, as contended by Marshall, a product of Bactrian Greeks. Through these carvings, so far as we know, Buddha was imaged in human form for the first time. Did Greece teach idolatry to India as she taught it to Rome?

Throughout its latter half, the book speaks chiefly from the side

of the West, in its growing traffic with the far East and its increased geographical knowledge down to the end of Roman times. Finally the author states with frankness his opinions concerning the respective importations of ideas. Among the sciences, he points out that the only one for which India manifestly owes a large debt to Greece is astronomy. The metempsychosis doctrine of Pythagoras, and other early Greek notions resembling the Hindu he thinks must be coincidences merely, since there is no evidence of an intercourse which could have brought them. He ascribes an Indian derivation to some of the later Occidental concepts, such as those in Neo-Platonism, Manicheism and Gnosticism. Christian monasticism may have an Eastern origin, as also relic-worship and the use of the rosary. Neither the supposed parallels between Christ and Krishna nor those between Jesus and Gautama are adjudged satisfactory, but Lamaistic ritual may be due to Persian Christian influence. Professor Rawlinson's backwardness in accepting derivation theories is in pleasing contrast with the assertiveness of many writers and is an evidence of his wide studies. The way to doubt plausible hypotheses of borrowing is to find many others equally plausible where borrowing is out of the question.

Professor Rawlinson has done well at this time to recall the statement of Megasthenes that the Hindu laborer would calmly proceed with his ploughing while embattled armies were engaged near by. Indeed it is due to age-long national habits, for, he remarks, the same was observed during the siege of Delhi by the English in 1857. Such has been the Indian method, both in its restriction of military requirements to a certain class and in its humane indifference to non-combatants.

EDWARD P. BUFFET.

JERSEY CITY, N. J.

The Psychology of Religion. GEORGE ALBERT COE. Chicago: University of Chicago Press. Pp. xvii + 365. 1916.

Ever since the psychology of religion came to be recognized as a distinct field of investigation, a need has been felt for an adequate text-book on the subject; for none of the admirable treatises upon the religious consciousness, such as James's Leuba's, Ames's, and King's, have attempted to treat more than a quite limited portion of the field. Dr. Cutten's *The Psychological Phenomena of Christianity* does, indeed, aim at greater inclusiveness, but its essentially popular and unscientific character prevents it serving as a really adequate presentation of the subject. The long-felt need is at last filled in the admirable book from Professor Coe's pen, now under review. Almost every important aspect of the subject is treated—the general

nature of religion and of the psychology of religion, the religious consciousness as such, the anthropological problems involved, the interrelations of society and individual, together with many special phenomena such as conversion, religious leaders, the subconscious, mysticism, the belief in a future life, prayer, *etc.;* while the volume is supplemented by a large, but carefully selected bibliography which will be welcomed by every student of religion.

Professor Coe approaches his subject as a technical psychologist, yet as one who knows religion from within as well as from without. With a frankness as welcome as it is rare, he states in his preface his own sympathetic attitude toward religion and toward Christianity in its liberal form, in order that the reader may discount it if so he likes. Few of Professor Coe's readers, one may safely predict, will find anything to discount, and most of them will close the book with the conviction that it does no harm to a writer on religion to know something about the inside as well as the outside of his subject.

If psychology is to have anything whatever of significance to say about religion, it must, in Professor Coe's opinion, view its data from the *functional* point of view. To describe merely mental states as such—mere static entities—will give one no knowledge of religion. Religion, in fact, comes truly into being only when the mental states function, become organic in the lives of individuals and societies. Hence every significant psychology of religion must advance beyond mental states and mental mechanisms and deal with *persons.* It is easy to build up an analytic psychology that analyzes persons into psychic atoms: but when the analysis has been carried out, religion will be found to have evaporated. But persons, for Professor Coe, are never stark and separate entities; they derive their nature—their *personality*—from the society of which they are parts. Professor Coe accepts without reservation the social view of the individual which the work of Baldwin and Royce has made familiar. Indeed it may be questioned whether he has not accepted it too absolutely. Especially one may ask whether he has done full justice by the individual's sense of cosmic relations which, even in impersonal terms, constitutes an important element in much genuine religion. The slight attention paid to this aspect of religion—in line with the contemporary widespread tendency to be lavish of emphasis upon the social—prevents our author from seeing any real difference between religion and morality. The natural tendency to define religion in terms of what one would like it to be used to express itself in definitions which confined religion to belief in orthodox Christian theology; to-day it is seen in the attempts of an influential school of psychologists to identify religion with social righteousness. It must be said, however, that Professor Coe yields only at intervals to this tempta-

tion. And certainly in every other respect he has presented a very sane and sound interpretation of what religion is.

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An Introduction to Kant's Critical Philosophy. GEORGE T. WHITNEY and PHILIP H. VOGEL. New York: The Macmillan Company. 1914. Pp. viii + 226.

This *Introduction* is a text-book designed especially for "undergraduate instruction on Kant," in particular on Kant's *Critique of the Pure Reason.* Its authors with commendable conscientiousness have checked any tendencies they may have had to force the teachings of the great German to fit any general scheme for a history of philosophy or to make his philosophy appear internally more single-minded and consistent than it really is. Such control might indeed be expected to be a result of joint authorship. But certainly Professors Whitney and Vogel have produced a book that in simple and accurate fashion *represents* the Pure Reason, their success being such as easily to elude deserved appreciation. Conscientiousness is never just commonly spectacular. To say, as in certain mood one might, that the book is not brilliant, that it makes no "contribution," that it has brought nothing out from between the lines, that among other things it might well have whetted the student's interest by making something of the conflicts and inconsistencies of Kant, is even in a way to describe the book, but also it suggests criticism where criticism is uncalled for. Simply, this *Introduction* is well done for what its authors undertook to do and any teacher whose students may not wisely be turned to the *Critique* itself, whether in translations or in the original, will find the book a useful one.

ALFRED H. LLOYD.

UNIVERSITY OF MICHIGAN.

JOURNALS AND NEW BOOKS

MIND. January, 1917. *Enjoyment and Awareness* (pp. 1–11): C. LLOYD MORGAN.—Attempts further to elucidate the concept of "ubiquity of awareness" as set forth in an earlier article. Enjoyment is immanent in any system. Awareness is a "transient influence" due to constitutive evolution in which something new (emergents) comes into being on account of higher forms of relatedness. As a criterion of the highest or cognitive form of relatedness there is prospective awareness, its specific *quale* being due to the constitutive character of progressive evolution. *Rousseau's Doctrine of the Right to Believe* (pp. 12–28): NORMAN WILDE.—Optimism is the keynote of Rousseau's creed, which finds in feeling the

organ of religious truth. Rousseau is a pragmatist in his emphasis on useful knowledge, and in the place given to feelings as grounds of belief, but he does not deny objectivity of truth. His real place is with the intuitionists of the Platonizing school. *Mr. Russell's Lowell Lectures* (pp. 29–52): PROFESSOR L. P. SAUNDERS.—"In my opinion, Mr. Russell's whole account is vitiated partly because he introduces distinctions that do not exist and leaves out others, of great philosophical importance, that do; and partly because his purely 'logical' method of solving difficulties is epistemologically unsound." *Speculations on the Working of the Brain* (pp. 53–70): T. GRAHAM BROWN.—Traces the history of physiological speculations regarding the action of the nervous system, states the present position of our knowledge on the subject, and concludes that the brain acts as a whole, that its function is to control the movements of the body, and that it may "be actuated not only by in-going nerves, but also by the direct action of changes in the blood." *Discussions: The Philosophical Basis of à Fortiori:* J. E. TURNER. *Causality and Implication:* Chas. A. Mercier. *Critical Notes:* George Boole, *Collected Logical Works;* Vol. II., *Laws of Thought* (ed. P. E. B. Jourdain): C. D. BROAD. John Theodore Merz, *Religion and Science: a Philosophical Essay:* H. R. MACKINTOSH. Charles Manning Child, *Senescence and Rejuvenescence:* W. LESLIE MACKENZIE. *New Books. Philosophical Periodicals. Correspondence.*

Brigham, Carl C. Two Studies in Mental Tests. (1) Variable Factors in the Binet Tests; (2) The Diagnostic Value of Some Mental Tests. Psychological Monographs, Vol. XXIV., No. 1. Princeton, N. J.: Psychological Review Company. 1917. Pp. 254.

Poussin, L. de La Vallée. The Way to Nirvana: Six Lectures on Ancient Buddhism as a Discipline of Salvation. Hibbert Lectures, Manchester College, Oxford. Cambridge: University Press. 1917. Pp. x + 172. 4s. 6d.

Pringle-Pattison, A. Seth. The Idea of God in the Light of Recent Philosophy. Gifford Lectures, University of Aberdeen. Oxford: Clarendon Press. 1917. Pp. xvi + 423.

Schwarz, Osias L. General Types of Superior Men. Boston: Richard G. Badger. 1916. Pp. 435. $2.50.

NOTES AND NEWS

THE *Revue Philosophique* for July comments as follows on the death of Félix Le Dantec: "M. Félix Le Dantec, chargé du cours de biologie générale à la Sorbonne, est mort à Paris, le 6 Juin 1917, des suites d'une maladie dont il a stoiquement supporté les souffrances. Il était agé de quarante-huit ans. Sa fin prématurée est un nouveau deuil pour la *Revue Philosophique*, déjà cruellement frappée par la mort de M. Th. Ribot, à qui Le Dantec était lié, depuis de longues années, par la plus étroite amitié.

L'oeuvre de Le Dantec est certainement présente à l'esprit des lecteurs de la *Revue* à laquelle il collaborait depuis 1895. Ils ont en souvent la primeur de ses livres. C'est pour eux encore qu'il avait écrit son dernier article, "Vie et Fonctionnement" (n° de juin 1917), où se retrouvent, avec quelques-unes des idées qui lui étaient le plus chères, la netteté et la force de la pensée, la clarté et le bonheur de l'expression, qui ont rendu célèbre le *Traité de Biologie générale* et les autres ouvrages du savant philosophe."

The Macmillan Company has recently issued a volume entitled "Philosophical Essays in Honor of James Edwin Creighton." The book contains essays by twenty-two former students of Professor Creighton in the Sage School of Philosophy and is published in commemoration of his twenty-five years' service as a teacher at Cornell University. The volume was formally presented to Professor Creighton at a celebration held June 12 in his lecture room in Goldwin Smith Hall.

PROFESSOR CARL E. SEASHORE, of the University of Iowa, is giving courses at the summer school of the University of California. He offers special work on the relation of psychology to music.

DR. HENRY T. MOORE has been appointed assistant professor of psychology, and Dr. Karl S. Lashley instructor in psychology at the University of Minnesota.

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PSYCHOLOGY AND SCIENTIFIC METHODS

MR. BRADLEY, BAIN, AND PRAGMATISM

IT would appear from Mr. D. S. Robinson's article in this JOURNAL[1] that it is still thought adequate by the traditional intellectualism to say that pages 18–22 of Mr. F. H. Bradley's *Principles of Logic,* which profess to deal with certain views of the late Professor Alexander Bain, contain, by anticipation, a complete refutation of pragmatism. He asserts, amid other surprising allegations,[2] that "Bain actually anticipated pragmatic logic by advocating the identical notion of judgment which Dr. Schiller has openly espoused" and refers to "Mr. Bradley's trenchant and hitherto unanswered criticism of Bain's theory of practical belief," as something which will be news to me and may even "benefit" me by rescuing me from "the pitfall of arguing that all judgments are practical."

It would appear, therefore, that not only is Mr. Robinson unacquainted with my comments on these ancient allegations,[3] but also that it may still be a real service both to the philosophic issues of the day and to accurate historical scholarship to consider what precisely are the real relations between (I.) Bain's doctrine, (II.) Mr. Bradley's version of it, (III.) his criticism of it, and (IV.) pragmatism and the first three.

I.

Bain's doctrine appears most fully in the third edition of *The Emotions and the Will* (1875). It concerns the theory, *not of Judgment,* but of *Belief.*[4] Belief, he points out, has not only an intel-

[1] XIV., 9, p. 225.

[2] Such as that Aristotle, in *Eth. Nicom.,* VI., 9, and VII., 5(§3), "shows clearly what the application of logic to action is." It would be highly instructive to learn from Mr. Robinson what he thinks the doctrine of the Practical Syllogism really is, how it applies to action, and how it can be made 'clear.' If he undertakes this, I shall be happy to assist by referring him to some other relevant passages in Aristotle, because I greatly fear he will not be able to quote a completely stated, and still less a completely analyzed, 'practical syllogism' from the *Ethics.*

[3] *Cf. Studies in Humanism,* p. 133.

[4] Pp. 505–38.

lectual, but also a volitional side, and is not an affair of knowledge only; for "we may equally know what we believe and what we disbelieve—truth and error." It has also to be distinguished from Emotion, though emotions may accompany it. "Fictitious narratives may stir the mind more strongly than real. We may disbelieve and yet tremble." But Belief is "essentially related to Action." Preparedness to act upon what we affirm is admitted on all hands to "be the sole, the genuine, the unmistakable criterion of belief." Thus Columbus, when he sailed west to get to India, effectively showed his belief in the earth's roundness.

It is pointed out further that mere action upon organic impulse is not properly belief; action having reference to the future is required. So is cognizance of the order of nature, in which trust is put; otherwise belief is not to be distinguished from "fancy." "The genuineness of this state of belief is tested by the control of actions," *i. e.*, by our willingness to act on it. The consequences of this nature of belief "spread far and wide into the realms of intelligence and speculation,"[5] for though, "as the intellectual functions are developed . . . the materials of belief are more and more abundantly reaped from their proper field,"[5] "we must not depart from their reference to action," and though, "as the sphere of pure intelligence grows larger there is a progressive storing up of facts and laws, without any immediate regard to practical ends," . . . "there lurks a tacit appeal to action in the belief entertained respecting all that unapplied knowledge."[5]

It is, of course, noted that "belief varies in Degree" and that its strength is tested by the vigor in the pursuit of ends believed in strongly and the elation or depression entailed by success or failure. The origin of Belief is traced to Primitive Credulity. "We begin by believing everything; whatever is, is true." But Experience undeceives us; it depresses expectations and moderates our beliefs. For it can confront us with present fact that checks our credulity; indeed it is just out of such conflicts that beliefs proper arise. Subsequently we find some judicious remarks on the influence on belief of Emotion, Bias, and the Will (to believe, *etc.*).

Now it is true that Mr. Bradley does not use this third edition of *The Emotions and the Will* for the purpose of criticizing Bain. He declares (p. 22, *n.*) that as he is "entirely unable to understand" the theory in it (which is his way of saying that he can pick no holes in it) his remarks "must be taken to apply to the earlier one." To *which* earlier one, he does not say. I can not find, however, that there is any vital difference between the doctrines of the first edition and of the third. The last has been rewritten and considerably

[5] Also in the first edition, p. 571.

improved in statement; it is more lucid and precise, but the general doctrine is the same, and many of the most important passages quoted stand already in the first edition. Some rather vague phrases are gone, but as they may have provoked Mr. Bradley's onslaught, they must here be mentioned. Bain had affirmed (p. 568) "that belief has no meaning, except in reference to our actions; the essence, or import of it is such as to place it under the region of the will." But he added at once that "an intellectual notion, or conception, is likewise indispensable to the act of believing." So "while action is the basis and ultimate criterion, of belief, there enters into it as a necessary element some cognizance of the order of nature" (p. 570). Finally (pp. 594–5) he reiterated that in order to discriminate beliefs and "mere conceptions involving no belief" reference must be made to "action, as the only test and the essential import of the state of conviction. Even in cases the farthest removed in appearance from any actions of ours, there is no other criterion." For "the genuineness of a conviction is notoriously open to question, until an opportunity for acting presents itself."

It will be seen even from these brief abstracts that Bain's study of Belief is comprehensive, sensible and humane. It is entirely devoid of extravagance and defends no paradox, but endeavors honestly to do justice to the various aspects of the complex psychological state of belief. Its whole tone and atmosphere is, of course, congenial with pragmatism, but no philosopher need be ashamed to learn from it. Its problems, however, are not identical with those which pragmatism has raised into controversial issues. Its point of view is not logical, but psychological. It is not concerned with the logical nature of Judgment: indeed, the term does not occur anywhere in it. The problem which leads to the emphasis on the practical reference of belief is manifestly the difficulty of distinguishing *genuine* from *spurious* belief. How are we to know whether a man really believes what he professes? How are we to detect him when he is deceiving himself or others, *i. e.*, lying? Bain tells us to *watch his acts,* and the advice is probably the best that can be given, though it does not exhaust the subject. For clearly certain reservations must be made in the case of hypocrites, whose acts may lie as cleverly as their words, of actors, whose business is to act parts that do not necessarily express their character, and many types of self-deception, insincerity, mental confusion, hysteria, and dissociation, in all of which acts may occur which are no adequate test of the general character. Again it is plain that whether the test by action amounts to a "criterion" or not, depends on whether a "criterion" is, or is not, held to connote absoluteness and infallibility; but this question is verbal and not important.

Lastly, the phrases "essentially related" and "essential import" are conventional, and must not be pressed—at all events until some philosopher has contrived to show that absolute "essences" exist and how they are distinguishable from "accidents."

II.

Such being Bain's authentic doctrine, let us follow its Circean transformation in Mr. Bradley's hands, which Mr. Robinson invites us to admire. This transformation was no doubt occasioned by the difficulty, in every logic which retains the old abstract and absolute separation of logic and psychology, of accommodating so "psychological" a subject as belief; but this hardly justifies the omission, not only of any warning that what is presented as a theory of judgment was intended as an analysis of belief, but also of exact quotation and of any reference that could lead to an identification and verification of the incriminated doctrine. The most remarkable features of the transformation wrought by Mr. Bradley upon Bain's theory may be gathered from the following extracts.

The theory is first described as a "confusion of judgment with practical belief," and inquiry is then made whether "the essence of judgment lies . . . in the actual production of a change in real existence. Or, more simply, when an idea is judged to be true, does this mean that it *moves* some other phenomenon and that its assertion or denial is nothing but this motion? The doctrine admits that an idea or ideas when held true differ vitally from the same when suggested; and it proceeds to assert that the *differentia* is the effect of the idea on our conduct, and that there is no other *differentia* at all." Soon after we are told that Bain's assertion "is *not* that practical influence induces us to judge or results from a judgment: What is asserted is that judgment *is* nothing else whatever" (p. 18). "Against the false *differentia*" Mr. Bradley undertakes to show "(*a*) that the *differentia* may be absent from the fact, (*b*) that it may be present with other facts, (*c*) that the fact contains other characteristics which are the true *differentia* and are absent from the false, and (*d*) that the latter has a positive quality which excludes the fact" (p. 19).

But before we plunge into Mr. Bradley's proofs of all this, let us pause a little to recover our breath, and to express our amazement at the extraordinary divergence between Bain's text and the perversion foisted upon him. Not only is it impossible to identify the two versions, or to regard them as compatible, but even to trace any relevant similarity between them and to find any point of contact. They do not deal with the same problems nor speak the same language. Mr. Bradley's version is not Bain; strictly speak-

ing it does not even *profess* to be Bain, seeing that it ignores the matured statement of his doctrine. But it is as little relevant to Bain's first edition as to his third. Neither, *a fortiori,* is it pragmatism, ancient or modern, divined prophetically or conjured up out of the pit, in any form known to science.

Moreover, the doctrine it amuses Mr. Bradley to castigate is not even so stated as to be intelligible. We are not told *how* judgment is supposed either to *originate in* practise or to *influence* practise or to *be* "nothing but practical influence," nor even in which of these very different positions it is really to be found. Nor is it possible to conjecture what is meant by the dictum that "a true idea *moves* some other phenomenon, and that its assertion or denial is nothing but this motion." Where does the "true idea" move what, and how? In its local habitat, the brain? That would seem to be the only place where "ideas" can be conceived to be immediate causes of motion. But how is such an idea or such motion a "phenomenon"? The only other thing an "idea" might seem capable of setting in motion is a tongue; but *false* ideas seem just as potent to set tongues wagging as *"true."* And by what magic arts of exegesis are the doctrines that beliefs have a practical test of their genuineness, or even that judgments have a practical function, transformed into this unmeaning nonsense?

Nor is Mr. Bradley's "Bain" merely nonsense that can not be traced to any authentic source. It is not even consistent nonsense. In one place we are told that the execrable error holds that "judgment *is* nothing else" but practical influence; in another, that its "essence" alone "lies in the production of a change." Unless, therefore, the whole nature of judgment is absorbed into its "essence," and judgment admits of no "accidents," *i. e.,* is necessarily "true" and never "false," these statements are incompatible. Neither of them, however, is insisted on when Mr. Bradley proceeds to dismember his man of straw; what is then criticized is mainly the assertion that ideas always exert a practical influence (p. 19), or that all judgment moves to action (p. 20), or that "Belief must induce action" (p. 21).

III.

In detail, Mr. Bradley endeavors to prove against his "Bain," (*a*) that the *differentia,* "practical influence," may be absent from judgment. He "tests" it by abstract instances drawn from geometry. He assures us that when it hears that "the angles of a triangle are equal to two right angles, it collapses at once." We are bound to take Mr. Bradley's word for it, though we should not otherwise have supposed that his cockshy could have stood up enough even to

be bowled over. But a pragmatic logician might here convict Mr. Bradley's objection of arrant Formalism. For of course his specimen of a geometrical "truth" is a mere paper judgment. If and when it was used, and became a real judgment, there would have to be a context, and a purpose and a particular situation, to which it was relevant and then the "practical influence" it exerted would speedily be found in them. At any rate neither Mr. Bradley nor any other philosopher goes about reciting geometrical truths at large and at random.

(*b*) It is argued that practical influence can not be the *differentia*, because "ideas may influence me, though I never do hold them for true." This objection to his "Bain" Mr. Bradley has actually *borrowed* from the real Bain. Both agree that we may "disbelieve and yet tremble,"[6] *e. g.*, in passing a "haunted" churchyard. And the doctrine of both may be *wrong*. For as Mr. Bradley confesses, in an interesting footnote, *more sus*, the right analysis of such cases may be that when we tremble our disbelief in ghosts is suspended, or that we are a prey to conflicting beliefs. If so, our action would have revealed to us that our beliefs were not as genuine, or as strong, or as deeply ingrained, as we had supposed.

Mr. Bradley's second argument under this head is not a plagiarism, but a quibble. He actually appeals to "that class of ideas which influences our actions without seeming to be true. I refer to practical ideas, the representation of a desire which is now felt to be unsatisfied. It is certain that these now move us to active pursuit, and it is equally certain that they are not judged to be real; for, if they were, then for that reason they would fail to move us." On the strength of this passage Mr. Bradley may perhaps claim to have anticipated Professor Dewey's "practical judgments"; but he is clearly juggling with the ambiguity of "real." The desired ends which move us are *already* real as psychic facts, while they are *yet to be* realized in the external world.

(*c*) Practical influence is not the true *differentia* of judgment, but an "accident," because it would be "comic if the judgment, it will rain to-morrow, is the same as buying an umbrella to-day." It certainly would be, but not so comic as the misapprehension which regards this joke as a confutation of pragmatism. Mr. Bradley contends that "assertion and denial, together with the difference of truth and falsehood" are the true *differentia* of judgment, and that "there is something in them which falls outside the influence of ideas on the will." Pragmatic logic will assent to the first statement, and even insist that its truth, and the neglect thereof by the old logic's failure to differentiate truth from falsehood, were pre-

[6] Quoted above.

cisely what incited it; but as regards the second, it will distinguish, and claim once more to detect a confusion between the abstract judgment-form and the real judgment, a confusion which ignores that the latter must be purposive, selective, and therefore, volitional.

(*d*) True judgment has a *differentia* which precludes its reduction to "a mere practical attitude." "The practical influence of ideas must have degrees," but "Judgment is primarily logical, and as such has no degrees."

Once more we get Formalism, a confusion, and a series of half truths, which we are here opportunely told "are in strictness no truths at all." It may be said, doubtless, that in the abstract and "as such" judgment has no degrees; but is not to take it thus abstractly precisely the essential vice of formalism, against which pragmatic logic is a protest? And to transfer what may be said (in a sense) of the abstract paper "judgment" to the real judgment, made by a real person on a definite occasion, is a confusion which a humanist must never weary of exposing. So soon as logic is allowed to consider real judgments in their full concreteness, it becomes evident that the formal absoluteness of the assertion in judgment in no wise guarantees an equal absoluteness to the real meaning. I may declare "*A is B*" with every degree of confidence of which a mind is capable, from cocksureness to the most hesitant and provisional assent in the hope of repressing troublesome doubts. And my real meaning and intention is *not* to be understood as affirming the empty form and its merely verbal claim to certainty, but is to convey, if possible, the precise amount of assurance, with which I view the connection of A and B. The one thing I can *never* really mean is what alone the old logic will recognize as my meaning, *viz.*, to enunciate that *A is B* absolutely: for my judgment, whatever the strength of the confidence and belief in which it was made, must always have been relative to a real doubt. This doubt may have existed in my mind, and may continue to haunt me; or it may have been supposed to exist in the minds of those to whom the judgment was conveyed: but unless it was an answer to a question, and an attempt to settle it, the judgment would have been a superfluity and would not have been made.[7]

We must conclude, then, that whether or not Mr. Bradley has succeeded in annihilating his "Bain," his own arguments are by no means very sound or successful in themselves.

IV.

This conclusion, taken together with the spuriousness of the so-called "Bain" and our arguments for both these contentions, should

[7] *Cf.* my *Formal Logic*, pp. 173, 202.

suffice to dispose of the claim which sees in Mr. Bradley's polemic a prophetic confutation of pragmatic logic. But it may be well to clinch the matter by pointing, more constructively, to the positive features in judgment which irresistibly compel me (I will not venture to speak for the other pragmatists) to recognize its universal relation to practise. (1) It is imperative that the logician should get hold of a real judgment to examine, and not of an empty judgment-form, of which the study can only lead to verbalism. (2) Such a real judgment is always found to have a particular context and purpose, which connect it vitally with the action of its maker. (3) To understand its real meaning, therefore, it is necessary to ascertain both how he came to make it, and what he wants to do with it. (4) It is in fact his *personal act* throughout, and (5) its logical character is that of a *selection,* which has preferred it above its rivals and alternatives, and (6) constitutes it a *value-claim,* so that, *in effect though not in verbal form,* all judgments are really value-judgments,[8] and the distinction between "fact" and value becomes nugatory. (7) This claim, however, is never really final (despite its verbal finality), because (8) it must always be tested by such of its workings as are held to be relevant to its "truth." (9) Hence the truth-value of the truth-claim always depends in the end on the *consequences* to which it leads.

It will be obvious to the reader that *not one* of these essential (*i. e.,* important and vital) points is either made, implied, or prefigured by Mr. Bradley's "Bain." Nor are they confuted or even so much as mentioned by Mr. Bradley himself.[9]

It will be profitable, finally, to inquire how far Bain's real doctrine contains anticipations of pragmatism. Pragmatists will, of course, feel not jealousy, but gratitude towards Bain for his valuable analysis of the phenomena of belief, and will gladly accept it as far as it goes. In so far as he has made it clear to logicians that they must take into account the beliefs which necessarily accompany the act of judgment, he has certainly prepared the way for them. But it should not be overlooked that his problem was different from theirs. Their question was not *how are genuine to be distinguished from spurious beliefs?,* but *how is the truth-claim of a judgment to be tested?* and *what do we mean by its "truth"?* The test Bain proposed, *viz.,* willingness to act on the belief or the truth-claim, is an important one: for though it is not the absolute criterion an enlightened logic has ceased to hunt for, it does form a convenient and frequently applicable test of sincerity, and exposes much humbug and make-believe. It is not, however, coextensive with the

[8] *Cf.* this JOURNAL, Vol. XII., pp. 685–6.

[9] Nor yet by Mr. D. S. Robinson!

pragmatic test, nor the whole of it. It leaves out the reference to the *consequences* of acting on a belief, and the logical reaction of *success* or *failure* on the original belief, and consequently fails to connect the "true" with "satisfaction" and with the "good." Neither does it lay down the logical canon that *all truth-claims* must be tested. In short, it covers only a small part of the ground over which the pragmatic controversy has since extended.

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A NOTE ON THE NEEDS AND USES OF ENERGY MEASUREMENTS FOR WORK IN PSYCHOLOGICAL OPTICS

A BRIEF discussion of this subject was given by us five years ago in an article, entitled "A Note on the Determination of the Retina's Sensitivity to Colored Light in Terms of Radiometric Units."[1] Since that time some dispute has arisen with regard to the comparative merits of the subjective and objective types of measurement of the stimulus light for work in psychological optics. Time alone can, of course, reveal the full range of needs and uses of the objective type of measurement. A few words in the way of general perspective, however, may not be out of place at this time.

Considered in its relation to the eye, two points of view may be recognized in the rating of lights. One of these is involved in their rating for the use of the eye as an organ of seeing. In such a rating it is obvious that the method should take into account all of the eye's peculiarities of response to the different wave-lengths of light. In the production of illuminating effects this is the work of photometry, which should be done by the eye or some instrument calibrated to give results in terms of the responses of the eye. Another and quite a different point of view, however, is involved in their rating for the purpose of investigating the eye's peculiarities or characteristics of response in every way in which it is capable of giving response. In such work it is obvious that the ultimate method of making the rating should be free from the peculiarities to be investigated, that is, should not be made by the eye itself. In general, in work of this kind, two needs arise. (1) A method of specification is required which will make possible an accurate and convenient reproduction of intensities from time to time and from laboratory to laboratory. The difficulty of doing this by photometry with lights differing widely as to wave-length, as do in most cases the stimuli employed in psychological optics, is too well known to need emphasiz-

ing here. Obviously what is needed for certitude in this work, is a measuring instrument which can be calibrated directly against the standard of radiation, or black body, and which is non-selective in its response to wave-length—not an instrument like the eye, the selenium cell, the photo-electric cell, or the photographic plate, the responses of which are not only selective to wave-length, but vary in their amounts of selectiveness with change of intensity of light, differ greatly in both of these regards (especially the eye) from instrument to instrument or from sense organ to sense organ, and can not be calibrated against the total of radiation of a black body.

The insistence on a subjective method of rating for standardizing purposes, when the objective method is available, is not only difficult to understand, but is entirely contradictory to current practise in other sense fields. No one would think, for example, of specifying, for the purpose of securing reproducibility, the weights used in an investigation of skin sensitivities in terms of the skin's own responses when the means of making the physical measurement is at hand; yet there should be more chance of successfully establishing from laboratory to laboratory a system of calibration of skin measurements in terms of some common standard than there is of accomplishing the analogous task in case of light. It is scarcely conceivable that the most ardent advocate of subjective ratings in case of light would recommend the substitution of the subjective for the objective method for work on the skin for the simple reason that it would be so undesirable as not to be tolerated unless, for want of an objective method, it was rendered absolutely necessary. With the objective method available from the beginning, the possibility of using the subjective method has not even been raised in work on the skin. And indeed the subjective method has been used in rating light intensities only because (*a*) for more than a hundred years no other method was available, and (*b*) it was desirable to rate lights for use in seeing by a method which gave results corresponding to the eye's powers of response. The former of these reasons for its use has now disappeared. Only the latter, with a few laboratory exceptions, remains and marks off for the subjective method of rating a separate and special field which is clearly recognized as such by physicists and the engineers dealing with the problem of lighting.

As a brief, however, for the continuation of the use of the eye for the measurement of its own stimuli, although such measurements would not be subjective, it may be claimed that in time it will be possible to calibrate the eye by means of the non-selective radiometers so that it can be used to measure the visible energies directly. For example, just as it is possible to measure a linear dimension with

a meter rod and to convert the results into terms of the English system, and *vice versa;* so it may be possible to measure the different wave-lengths of light by the eye and convert the results obtained into energy values. The difficulties in the way of this, as we have already pointed out, consist in differences in the sensitivity of different eyes for a given wave-length; the selectiveness of the eye's response to wave-length and to intensity and its variations in both of these regards from observer to observer; the lack of a fixed scale from observation to observation, even in the case of a single observer, *etc.* In short, to complete the analogy suggested above, it would be an exceedingly difficult task to convert measurements from the metric into the English system and *vice versa* if very few of the measuring rods employed represented the same amounts of linear space; if in case of a given rod the dimensions of some objects were underestimated and others overestimated and the magnitude of this underestimation and overestimation varied with the dimensions of the object measured by amounts as yet undetermined, *etc.,* as happens in case of the eye's evaluations of the wave-lengths of the visible spectrum. Obviously if the eye's ratings are to be converted into energy values, this conversion can come only after a very great deal of investigation and calibration against radiation standards by means, for example, of the non-selective radiometers, which but constitutes one of the subdivisions of what we have included under the second of the needs we are giving for energy measurements in the study of the responses of the eye. However, to represent the calibration as now completed and available for use instead of scarcely begun, as is being done in some quarters, is chimerical and visionary to a degree which we can consider compatible only with an inadequate knowledge and understanding of all that is involved in the problem.

(2) The second and perhaps more fundamental need for energy measurements for work on the eye is, as stated in the general heading, for a method of rating the stimulus which will make possible a quantitative comparison of the eye's power of response to its stimuli in every way in which it is capable of giving a response; for we can know the kind and amount of its selectiveness of reaction to the different wave-lengths of light only when they are compared with those of an instrument as a standard which shows equal power or capacity of response to all wave-lengths. Only with such an instrument, or rather with such an evaluation of the stimuli as a common or invariable standard to which to refer the eye's evaluations or responses, can the work of comparing its powers or peculiarities of response to its stimuli be put on a basis that can be called quantitative for a single eye or from eye to eye. To this it may be demurred, however, that in some problems it is required as one of the

features of the investigation that the stimuli have equal power to arouse the eye's response or sustain some subjective relation to each other. This need we have always freely recognized both in our work and in our recommendations.[2] It in no way conflicts with, however, or supplants the more fundamental one already given, but is rather supplementary to it in certain types of investigation; for even in the cases where the subjective relation is demanded to fulfil the requirements of the investigation there is still great need for the ultimate purposes of the science that the physical amounts of light required to produce this subjective relation for the given observer be determined and specified. Again to use the analogy of work on skin sensation, it would be a careless investigator indeed who would fail to specify, if it were possible to do so, the physical measure of the weights he used to give equal pressure responses, for example. In short, it seems a paradox that one should even feel the need to make a special pleading for the introduction of objective measurements into the work of psychological optics when it is the current practise to use objective ratings of the stimulus in every other field of psychological investigation in which it is possible to do so, the intensity ratings in vision and audition alone being the conspicuous outstanding exceptions and these being so only because adequate methods for making such ratings have been slow in coming.

As examples of needs for regulating the stimuli to give certain subjective relations we may quote here the following cases that we have already formally recognized. In a recent investigation of the comparative lags of the achromatic response to wave-length made in our laboratory, the stimuli employed were made photometrically equal and the amounts of light used to give these equal responses were measured radiometrically. The photometric equalizations were made because the data were wanted in an interpretation of the characteristic overestimations and underestimations found in the results of certain observers in photometry by the method of flicker as compared with their results by the equality of brightness method. In another case in a determination of whether stimuli which have the same power to arouse the achromatic response have also the same power to make the eye lose in its capacity to give this response as a result of prolonged stimulation, the stimuli were as a matter of course made subjectively equal as one of the essential conditions of the investigation; but again the amounts of light required to produce this subjective relation were determined radiometrically for the purpose of ultimate specification. Also in our

[2] See, for example, *American Journal of Psychology*, Vol. XXIII., pp. 329–331.

original note on energy measurements we recognized quite broadly the possible need of establishing subjective relations between the stimuli used. For example, in discussing methods of determining after-image and contrast sensitivity, we state: "It is conceivable that two points of view may be held with regard to what is meant by after-image and contrast sensitivity. (1) After-image and contrast sensitivity may express a relation between the amount of light required to arouse after-image and contrast sensations and the unit of light used. (2) It may express a relation between the amount of light required to arouse the after-image and contrast sensations and the amount required to arouse the positive sensation."[3] In the former case the after-image or contrast sensations are treated as one of the eye responses the selectiveness of which to wave-length is to be determined; in the latter a figure is sought which expresses the relation between the after-image and contrast and the positive sensitivities. On the same page and the one following we say: "Similarly, two views may be held with regard to the determination of the comparative rates of fatigue, and of the development-time of sensation. (1) Lights equalized in energy may be used. (2) The energy of the lights may be made proportional to the sensitivity of the eye to the different colors." Also in discussing the investigation of the peripheral limits of sensitivity, we state: "(*a*) The limits may be considered in relation to the comparative sensitivity of the retina to the different colors. (*b*) They may be considered in relation to existing color theories. In the first of these problems the limits should be obtained with stimuli equalized in energy. So obtained, the results will constitute merely another expression of the comparative sensitivity of the retina to the different colors." "The second problem is more complicated and will be made the subject of a separate paper." Indeed, as these citations abundantly show, we have never failed to recognize that the stimuli in certain types of investigation must be made to conform to some type of subjective relation, but these investigations constitute in immediate importance only a minor part of the work that is to be done in getting a thorough knowledge of the eye's characteristics of response; and even in these investigations there is as great need of an invariable standard of reference as there is in any field, psychological or otherwise, where the value of quantitative work or measurement is recognized.

Perhaps the general character of the discussion will not be deviated from too widely if we add in conclusion a word on the determination of retinal sensitivities which will indicate in a concrete case the type of treatment that should in our opinion be given

[3] *Op. cit.*, p. 329.

both to the response and to the stimulus, when possible, in quantitative work in psychological optics. If the sensitivity of the retina is to be measured in a way that is comparable with the measurement of the sensitivity of the physical recording instruments, two conditions must be fulfilled: (*a*) the amounts of response in terms of which the comparison is to be made must be numerically comparable; and (*b*) the amounts of stimulus used in arousing the response must also be numerically comparable or commensurable. The sensitivity of two galvanometers could not be compared, for example, were it not known that the divisions on the scale of each were either equal or commensurable; likewise the amounts of current used to produce the given deflections must be known in terms of the same or comparable units. With the introduction of the radiometric treatment of the stimulus the second of the above conditions is fulfilled, and for the first time in a way that can be considered quantitative to a degree that would be acceptable in rating the sensitivity of a physical instrument. With reference to the first condition we are confronted with a situation somewhat similar to that which obtains in heterochromatic photometry. That is, in general, five different quantities have been used or suggested in the work of measuring sensitivities (the liminal threshold, the just noticeable difference, the average error, equal amounts of response and equal sense differences), but only the last two of these conform to the requirement that is considered absolutely necessary in determining the sensitivity of a physical instrument, namely, that the amounts of response as well as the amounts of stimulus must be numerically comparable. Moreover, in the absence of sureness of principle in case of the other three, the empirical check of agreement in result with those that have the needed sureness of principle has never been offered; yet sensitivities are determined just as if this condition did not exist, comparisons are made and conclusions are drawn. In short it may not be out of place to call attention here to the looseness of thinking and practise that prevails more or less generally with regard to the work of determining physiological sensitivities as compared with the analogous physical determinations. For the sake of consistency it might well be urged either that this work be revised on the basis of the standards set for the physical instruments with all of the interchecking of methods that is needed, or that the term sensitivity with its definite quantitative connotation be abandoned in all cases in which this standard can not be lived up to.

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THE TELEOLOGICAL DELUSION

THE primate of Belgium wrote last October in a widely-published pastoral letter: "You are not to know if the world will last 1,000 years more, 10,000,000 years more; not whether you will die in your youth, or in middle age or in extreme old age. Only one thing is necessary, that you know your own soul and that in the all-powerful hands of the Master of Events you shall be the docile instruments . . . for the accomplishment of his will." The untoward events of the last two years Cardinal Mercier explains on familiar dualistic principles. "In the primitive plan of Providence passions were subjected to reason and would never have been permitted to intrude in the peace of families or of nations; but sin has overthrown this generous plan. . . . Pride and cupidity break into the world's balance, repression and armed defense are necessary for its reestablishment." But in accordance with the habit of the Christian dualist this thwarting of the divine will the Primate soon overlooks. "To worship God," he writes, "is to proclaim that God is God, . . . that all He does is well done."

This pastoral letter is not only an interesting reiteration of pre-Darwinian Christian philosophy. Given its background, it is a remarkable expression of some of the means taken again and again by the supernaturalist to give himself a sense of power and of mastery. If he is a Christian he achieves the assurance in three ways, through the conception and feeling of self-control or self-mastery, through belittling the control of others, his mundane masters, through glorifying the power of his own gods, a vicarious, but limitless means of intensifying self-esteem. "If you are at the mercy of events," writes the cardinal, "when you should command them it is because you obey your emotions, though you have the right and power to be their masters. Silence them." It is the cry of self-will, the will to power of the ascetic. "Whatever happens to you, there is in you something which no person or no thing can touch—that is your soul." Invasion or deportation becomes from such a standpoint an insignificant occurrence and the power of the invader or deporter of little moment. "As to real power, power through God, it is yours," writes Cardinal Mercier, "because you identify yourself with an omnipotent Deity. This soul which is yours, of which you are the master—will commune with God, if you desire it—it will be embraced by Him. . . . Each historic period is a page from the divine book of Providence. We write it, but the strong will of the All-Powerful holds the writing instrument." That it is the other way round Cardinal Mercier could not be expected to realize. In order to function properly in the mind of the devout, the principle of

divine vicariousness must be ignored. The readiest way to ignore it is by inversion, making man the instrument of God instead of God the instrument of man.

Cardinal Mercier is undisturbed by any suggestion that God is the instrument of man. And despite the exigencies of his dualism he is also undisturbed by any suggestion that in any way God's power, and consequently man's power, is limited. He is, we must remember, a Catholic theologian. Protestant theologians are less determinedly self-protective. Weakly they listen now and then to the voice of science. And they pay up for it with the panic that comes to any one who apprehends that his source of power is threatened. Of such panic was no small degree in the attitude of the Protestant Church towards the doctrine of evolution. Evolution appeared to undermine the argument of design, of divine purpose. Evolutionary theory might make the world or a part of it seem less of a mystery, but to the theologians that was not the point. The point was their own sense of having something to say about the mystery. They did not mind the mystery so much if only they had a finger in it. And this they had on their theory of their influence with the arbitrary personal designer of the seemingly chaotic universe. And so in self-defense the theologians raged against evolution—until they saw a way out.

Their way out was through a still larger degree of vicariousness and through stretching the argument of design. The law of evolution was conceived of as an instrument of God and consequently as an instrument of man. Evolution soon became indeed an even more pliable instrument than deity. The divine purpose, in spite of rationalizing, would give trouble. It was erratic and even at times incomprehensible. The law of evolution seemed more dependable, and to read your purposes into it took less ingenuity. You had only to consider yourself the fittest, for example, to argue that you were the proper survivor and then did you not cooperate with the will of nature by suppressing the unfit, just as you had cooperated with the will of God by suppressing the wicked or the impious? In eliminating lower types, lower classes, lower races you merely took nature's way, accelerating her a little perhaps. And this direct participation in nature's power gave an even greater satisfaction than the more indirect forms of participation with God. Eugenics and a colonial policy are even more satisfying to a desire for power than vow and sacrifice.

The satisfactions of eugenics and of pride of race have not yet flowered. Science has but begun to put a blight upon them, a blight they will long withstand. Meanwhile ambitious evolutionists are seeking, have sought other outlets for theory and energy. The theory

of racial evolution yields to a theory of cultural evolution, nature to nurture. Advanced evolutionists practise, so to speak, no longer in the name of God or of nature, but in the name of culture. Society, the progress of society, becomes the goal of their enterprising and masterful spirit.

Not that the control of society was not long since a goal for the ambitious. But the ambition was self-limiting, for it was of necessity concerned with keeping society as it was. The sense of power that comes through social control in primitive culture appears to come from resisting change, or in so far as it is inevitable, in pretending to regulate it. The seasons, weather, sun and moon, vegetation, animal life—all are regulated or promoted by ceremonials. Human life, conception, birth, mating, health, death, the whole round of human life is also regulated by ceremonialism. Change, growth or decay, is ignored until it has to be met, then a ceremony is performed to give people the feeling that it is they, after all, who have willed the change. Through ceremonialism, ritual for nature, and ritual for human life, people keep their sense of control. Ceremonialism like supernaturalism is an escape from reality.

But social improvement and education are much wider fields than social conservation and discipline. The idea of social progress is more satisfying to the will to power than ceremonialism. That is why in recent decades the conservative, the ritualist, has taken a back seat. Even contemporaneous pseudo forms of conservatism would not occur were not the struggle against progressivism of itself somewhat satisfying. But the time is not distant, perhaps it is at hand, when, progressives having ceased to pay further attention to conservatives, everybody will call himself a progressive. The arch antisocial then will be the skeptic of progress. Even to-day you are found much more aggravating when you say you do not believe in social progress than when you say you do not believe in God. Social progress has become, as Trotter would put it, a certitude, not a matter of knowledge.

The assumptions necessary for comfortable progressivism have long since been made—an humble beginning for culture, marked degrees of cultural differentiation, conscious social direction.

As in the case of a racial evolution, belief in cultural evolution requires for culture a low starting-point. Pride of race was injured by the idea of simian origin as long as the dogma of racial homogeneity was uppermost, but as soon as the races were differentiated on an evolutionary basis pride of race was immensely flattered by thoughts of simian ancestry or kinship. "The lower races are indeed ape-like," says the racial evolutionist, "but we, the higher race, long since evolved, of course, beyond that stage." Similarly the pride of

cultural evolutionists is flattered by lowly social beginnings. It makes the road already travelled seem longer, more imposing. Consequently the humbleness of so-called savage culture is a welcome conception. The evolutionary publicist, and what publicist is not evolutionary, clings to the wild savage. The wild savage is his *point d' appuis,* his indispensable starting-point. The wilder, the more degraded the savage, the more credit to the civilized. The more backward the backward races, the more advanced the chosen, the favored races. And so the savage, or, as the more sophisticated are given to calling him, primitive man, is held to be lacking in whatever traits his civilized defender most values. Primitive man, we hear, is improvident and thriftless, he is a creature of impulse lacking in self-control, his sex habits are promiscuous, in fact he has no sex habits, we have even been told by the religious that he has no religion.

Even the irreligious who hold that primitive man was a mere complex of religiosity assert that his religion was of a lower type than that of the so-called historic religions. Primitive institutions like primitive human nature are called upon to supply a perspective. The institutions of a modern society will seem more evolved if to them the institutions of primitive societies are a contrast. Posit autocracy, for example, for primitive society, or promiscuity, and democracy and monogamy[1] seem the results of culture evolved to a high degree. If democracy or monogamy be made to appear the unique results of modern culture so much the better.

So much the better, too, because all encroachments upon democracy or monogamy or any so-called modern institution may seem to be a reversion to an earlier type, a social survival, a relic of the unevolved past. Religion, for example, becomes a superstition; any obstacle to your progress, mere conservatism; Satan is rechristened Anachronism. Thus from this point of view there is no need of tolerating any social traits or habits or tendencies which run counter to your own.

Modern culture, then, is held to be an evolution from low cultural stages. But the satisfaction of the cultural evolutionist is incomplete unless he see himself, like the racial evolutionist, a contributor to evolution. Now he sees himself in this rôle more easily if he sees in it likewise his cultural predecessors. In other words, the theory of purposive social activity from the beginnings of society is a comfortable theory. Belief in the rationality of freshly initiated law or mode of life more or less necessitates belief in the rationality

[1] The way the promiscuity theory held its own for a time in scientific circles is as amusing an illustration of the influence of social pressure on science as any I know except perhaps the attitude of many scientists that science is a purely modern development, that outside of civilization there is no science.

of law or custom when it originated. Custom becomes maladjusted, of course, and antiquated, but in the beginning, holds the modern publicist, it was well-planned, serviceable, rational. Belief in the rational origin of custom is as important to the reforming publicist as belief in the divine origin of custom to the theocrat.

The spread of ethnological knowledge will undermine the purposive theory of cultural beginnings; it will undermine the theory of lowly cultural beginnings; it may even shock certain convictions about the differentiations of cultural groups into lower and higher: but faith in cultural progress, our paramount contemporaneous faith, I doubt if any amount of popularization of ethnology will shake. In that very popularization new foundations for the faith will probably be found. As long as our sense of progress gives us the glow religion once gave, we will protect it, protect it quite as ardently as supernaturalists like Cardinal Mercier protect their sense of the plan of Providence.

Witness the protection given our sense of progress in these passing days. See how it is recovering from the great shock inflicted by the European War. The supreme horror of the war lay in its assault on our sense of progress. It threatened to break down our faith, as we said, in civilization. Perhaps for a brief period that faith was indeed shattered or rather some of its foundations, but then, just as the human body builds up tissue to replace tissue lost or injured, so our faith in progress reconstructed for itself necessary points of view. Very early the faith-destroying causes of the war were obscured by the ends of the war. In the ends of the war were seen the ends of civilization. The war was a war for civilization—to Allies and pro-Allies and to Germans and pro-Germans alike.[2] Then when the ends of the war became from their obscurity useless to faith, faith seized on the effects of the war for consolation and support. The consequences of the war, we daily hear, will be important and beneficent, a world more liberal and more peaceful will emerge[3]—England

[2] A little behind Europe, as usual, America has begun to reformulate the slogan of "a war for civilization." Only the other day the presidents of eight women's colleges declared: "Although we believe that the settlement of international difficulties by war is fundamentally wrong, we recognize that in a world crisis such as this it may become our highest duty to defend by force the principles upon which Christian civilization is founded." (*The N. Y. Times*, Mar. 31, 1917.) [It is difficult to understand this except as an assertion that to act in a way you believe to be fundamentally wrong is a principle of Christian civilization. The manifesto, however, is probably not meant to be analyzed.] Since writing the foregoing, the American mill of idealism has turned out unsurpassing products—the war has become a war to end war, a war for democracy, a war to set the world free.

[3] *Cf.* editorial in the *New Republic*, March 31, 1917.

will be class-free, Russia[4] democratized, Europe purified, Feminism triumphant, Internationalism founded, and a Peace laid that will endure forever[5] even if it pass understanding.

I am, in fact, unable to see how peace can be born of militarism or to differentiate between militarism and militarism, but for the moment I hold no brief against militarism. My emphasis is upon the enormity of the claims made for the outcome of the war and more particularly upon the need felt to make such claims, upon the urge to rationalize war. To quote again from Mercier's pastoral, "Divine Providence . . . finds . . . the means to transform this world, troubled and embittered by the sin of our first parents and by our personal crimes, into a work of redemption which surpasses in the grandeur of moral perfection its own first plan." Now for Divine Providence read civilization expressing itself as war and we have: "War finds the means to transform this world troubled and embittered by savage survivals and by the weakness and faults of human nature, into a work of redemption which surpasses in the grandeur of moral perfection its own first plan."

God's purpose, nature's purpose, society's purpose—that is the course of teleology, of that science which of all the sciences or pseudo-sciences appears to be the most indispensable to human composure, perhaps to human happiness.

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[4] The egg of Russian revolution has been hatched out by the war, but was the egg not laid years ago? Russian revolution has been a nationalistic movement. The Russian autocracy was anti-national. If the national spirit is ready to express itself democratically a national war will no doubt hasten, as it has hastened in Russia, the birth of democracy. None would dispute that a national war might be expected to foster whatever contributes to nationalism or even masks under it. I have in mind the expected enfranchisement of English-women. It is proposed not because of any humanist consideration, but because of the women's national service.

[5] Very uncommon is realism such as that voiced by Charles P. Trevelyan. "The vitality of Europe is ebbing away. It is not the loss of money and of credit. It is not only the waste and desolation of provinces during the war and the economic catastrophes and political upheavals which will everywhere follow in its wake. It is not only the millions of dead and maimed among the young men. But it is the complete collapse of the old national standards. . . . After the war tyranny and militarism . . . will cling [in Germany] with fierce tenacity to their old strongholds and in Britain to their new-found opportunity." But even Trevelyan suggests that there may be "an instinctive popular reaction against them." (An open letter published in the United States, December 5, 1916.)

REVIEWS AND ABSTRACTS OF LITERATURE

The Psychology of the Organized Group Game. MABEL JANE REANEY. Monograph Supplement, The British Journal of Psychology, IV. Cambridge: Cambridge University Press. 1916. Pp. 76.

An analysis of the psychological factors involved in the "organized group game" is made from (1) the purely psychological and philosophical and from (2) the experimental points of view. An extensive survey of the literature, including the many theories of play, is given and a comprehensive bibliography is appended. The writer concludes "that play is a universal phenomenon found amongst animals and man and that its complexity varies with the stage of development of the species and the individual; that the plays of children can be divided into definite periods which coincide with the periods of race development; that the play of animals and children makes use of instincts and by modifying them intelligently trains for the adult life; that the theories suggested account, respectively, for different types of play; that the earliest forms can be explained by the surplus energy theory, the later forms by the practise theory combined with the recapitulation theory and much of adult play by the recreation theory; that the traditional games of all countries have arisen as the results of the imitation of the serious occupations of the life of the period; . . . that the organized group game as the highest form of motor play represents the tribal stage of the race; . . . that the final development of the group game seems to have arisen as the accompaniment to civilization and has been evolved as a means of giving scope to those instinctive tendencies which are balked by such civilization; that the evolution of this kind of game appears in the race which has inherited from its forbears the instincts of rivalry and pugnacity to a marked degree."

As result of civilization there has been a dissociation of ideas and a definite group of ideas formed around the concept "group game." The fascination of the "organized group game" in modern times can be explained on the lines that it has been evolved to satisfy the balked dispositions of a warlike race under the conditions of civilization, and that the cult of "playing the game" has been established as a national habit of thought by suggestion resulting in "tradition."

In the experimental part of the research, a questionnaire was sent to 1,000 of the leading public and secondary schools in England. The questions asked were:

1. (*a*) Do you consider that any evidence exists to show that mental development takes place as a result of definite training in a group game, such as football, hockey, cricket, netball, *etc.*?

(*b*) If so can you quote a definite case?

2. (*a*) Do you consider that there is any relation between play ability and general ability?

(*b*) Do the boys and girls who excel in games show any tendency to be above or below the average standard of intelligence?

(*c*) Do those who show marked apathy towards, or fail to reach any standard of efficiency in them, tend to be above or below this average standard of intelligence?

3. Are you aware of any special mental characteristics which mark respectively: Part I.: The best football players, the best cricket players, the best hockey players, the best netball players, the best lacrosse players; Part II.: The boys and girls who show least aptitude for playing games?

4. What game do you consider most valuable from an educational point of view?

5. From your experience, would you say that there is any special age at which group games appeal most strongly?

6. Do you think the school games should be organized in the upper school by the children themselves, or by a teacher?

7. Do you consider that games should be compulsory?

Six hundred and thirty-nine answers were received from 487 schools. The general conclusions are: (1) There *is* definite evidence to show that mental development takes place as a result of training in group games. A sufficient number of definite cases can be quoted to prove the above statement. (2) There is a definite relation between play ability and general ability. Girls and boys who play games well are on the whole *above* the average intelligence, or of average intelligence, but seldom below it. Girls and boys who show marked apathy to games or play them badly are on the whole *below* average intelligence. (3) The following qualities are marked characteristics of the best players: Alertness, rapidity of thought and action, judgment, resourcefulness. Children who show little aptitude for games tend to be slow, dull, and slack. (4) Football is the game of greatest educational value for boys; hockey for girls. (5) The games appeal most strongly to boys above twelve years of age, and to girls above thirteen. (6) The consensus of opinion is in favor of organization by the children, under supervision. (7) Games should be compulsory.

In general the writer concludes that there is a correlation between general ability and play ability for group games. The questionnaire method has had adverse criticism, however.

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The Modern High School. CHARLES HUGHES JOHNSTON, Editor. Revised edition. New York: Charles Scribner's Sons. 1916. Pp. 848.

Books of composite authorship are likely to have small unity, even though each contribution bear directly on the same subject. It is pleasing, therefore, to find that this volume, of thirty chapters, by almost as many writers, has a unity, that of the spirit of the modern high school.

The four parts deal, respectively, with "The Institutional Relationships of the High School," "The More Intimate Specialized Relationships of High School Work," "Definite Internal Expressions of the Social Nature and Socializing Function of the High School," and "Additional Socializing Functions of the Modern High School." More specifically, the book treats of the high school legal status, its relation to lower and higher schools and to the community; home and school associations; the administration of social activities, school clubs, and athletics; vocational guidance, *etc.* It is obvious from this enumeration that the book is limited in size only by the inventiveness of the editor, his ability to find authors, and the physical restrictions made by the publisher.

That the book has been successful is evidenced by the new edition. This contains one entirely new chapter by Dean Cubberley, of Stanford University, and Inspector Didcoct, of the University of Illinois, on "The Legal Status of the High School." The scholarship and care of these authors insure an accurate chapter. All other changes in the book are of a minor nature.

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JOURNALS AND NEW BOOKS

REVUE DE METAPHYSIQUE ET DE MORALE. January, 1917. *Charactères généraux de la philosophie française* (pp. 1–13): V. DELBOS. – The notes of an opening lecture to a course on French thought given at the Sorbonne in 1915–1916. In studying "the original elements of French philosophy, I should like to show in what France is revealed in its ways of philosophizing as well as in its doctrines, independent of English or German influence," the author wrote M. Blondel in November, 1915. *Sur les rapports logiques des concepts et des propositions* (pp. 15–58): L. COUTURAT. – Classic logic rests on the fundamental notion of the concept, but

logistic considers this notion as derived and subordinate to the more simple notion of the judgment. *La logique de la médecine, d'après Cabanis* (pp. 59–73): F. COLONNA D'ISTRIA. – Although Cabanis may appear superficially a continuer of the ideas of Condillac, his work is really turned toward the future and nineteenth-century science. *Études Critiques. L'éducation et la pédagogie experiméntale:* A. REYMOND. *Questions pratiques. Une idée en péril: humanité, humanitarisme, humanisme:* TH. RUYSSEN. *Nécrologie.*

Seward, A. C., Editor. Science and the Nation: Essays by Cambridge Graduates with an Introduction by the Right Honorable Lord Moulton. Cambridge: University Press. 1917. Pp. xxii + 328. 5 s.

Sidis, Boris. Philistine and Genius. Boston: Richard G. Badger. 1917. Pp. xxvii + 122. $1.00.

Starch, Daniel. Experiments in Educational Psychology. Revised edition. New York: The Macmillan Company. 1917. Pp. ix + 204. $1.00.

NOTES AND NEWS

THE AMERICAN PHILOSOPHICAL ASSOCIATION AND ITS PROGRAMMES

AT the last meeting of the American Philosophical Association a resolution was adopted requesting the president to appoint a committee of twelve to consider the question of programme. This committee has been appointed with Professor Lovejoy as chairman, and has arrived at certain decisions in regard to the next meeting of the association. But as probably this committee is likely to go on to make recommendations regarding programmes for future meetings, it seems desirable that there should be some general discussion of this question, especially as the committee is so large and its members so widely scattered that it is practically impossible that it should meet to consider the subject.

The American Philosophical Association has now been in existence for sixteen years. During the last half of this period the number of its members has increased rapidly; but there seems some ground for fearing that interest in its meetings is not so strong or so general as it was during the earlier years. If this dimunition of interest on the part of a considerable number of members who formerly took an active part in the association is an actual fact, I do not think it necessarily follows that the programmes of our recent meetings furnish its sole and sufficient explanation. But what is undoubted is the existence not only of loss of interest, but in some quarters of

a mild sense of grievance. I believe that I am not overstating the case in saying that a good many members think that there has been a distinct loss both in the interest and usefulness of the meetings of the association in recent years through the subordination of the other parts of the programme to the discussion of some specific subject, of interest to a particular group, and oftentimes defined so narrowly in terms of the presuppositions of that group as to render the discussion unmeaning, and to a considerable extent unintelligible, to others. That at least is my own opinion, and it is based on the experience of several meetings where a major part of the time was devoted to discussions such as I have described. Personally I have always maintained that the meetings are abundantly worth while apart from the programme. I recognize the difficulty of providing through the formal programme something of interest to every one. But I suppose that however much importance one attaches to the social and informal side of the meetings, one has to admit that the programme is something of the greatest consequence, and that upon it in the long run the existence of the association depends. I think, then, that we should seriously consider what are the important things which it is possible for the association to accomplish through its meetings and how the programme may best be adapted to the accomplishment of these ends.

At the first meeting of the association, in 1902, I tried to emphasize the importance of keeping in view certain fundamental objects, in an address entitled, "The Purposes of a Philosophical Association."[1] I do not know that I should now subscribe to every word of that address, but in general I believe that the principles which it lays down are true and are of importance in connection with the questions now under consideration. As I hope that at least the members of the committee will read this address, I will quote from it only a single sentence, but this I think expresses its central idea: "The promotion of philosophical scholarship and research is the only object capable of affording a purpose common to all the members of the association, and an interest which is likely to be serious and lasting" (p. 231). That sentence indicates where it is essential to lay the emphasis in our future meetings.

But our existing difficulties and discontents may be said to have arisen from an effort to realize the purpose indicated by the quotation. A number of members felt, I think, that the time devoted to the reading of miscellaneous papers and to such discussion as they might happen to call out, was very largely wasted. As it was sometimes said, "philosophy does not get anywhere by such a procedure."

[1] Published in *The Philosophical Review*, Vol. XL., pp. 219 ff.; also included in the *Proceedings* of the first meeting of the association.

It was hoped by setting to work more systematically, by "organizing" a discussion which should be continued through two or three sessions,—prescribing the channels in which it should run, and defining the terms to be employed—to compel the opposing forces to abandon their trenches and engage in open battle at a fixed predeterminable point. And if such an engagement could be brought about, so it was argued, there ought to be some definable result—a victory for one side or the other, and the consequent acceptance on the part of the association of a final philosophical truth, which as the "fruit" of the discussion would, of course, be a comforting mark of progress and might enable the "philosopher" to hold up his head in a company of "scientists."

It is obvious enough that this point of view, when carried out to such a length as I have suggested (and I have tried to set down soberly the courageous hopes of its representatives as I have heard them expressed) is nothing but scholasticism over again. It is possible to find interesting parallels between the disputations of the medieval schools and those which have been occupying us, both in respect to terminology and to the character of the problems. No one who was present can ever forget the Harvard meeting in 1911, when the battle ranged around the existence of tables, and the nature of the stick in the pool of water, and the definitions of "entities," and "subsistences," and whether knowledge changes the character of its object, or two realities occupy the same space at the same time! But scholastic or not, there was something fine in this exhibition. The definitions propounded, wonderful both for subtility and comprehensiveness, and the divisions and subdivisions which filled the blackboards, showed that the modern spirit had not dulled the interest of philosophers in formal distinctions or enfeebled their power to propound exact definitions. I do not mean to satirize unkindly discussions of this character. They have been entered into with a seriousness and an effort at exact thought that must command respect, and they have been carried on in a spirit that is altogether admirable. But the extreme artificiality that has been introduced into the discussions by the attempt to define formally the precise limits of the question at issue, and in some cases the meaning of terms to be employed, has had two unfortunate consequences. In the first place, in so far as the restrictions have been observed the outcome of the discussion has necessarily been barren; and secondly, those who have approached the problem under discussion from some other angle than that of the "programme committee"; or who are more familiar with the terminology of classical philosophy than with that of some very "modern" contribution, have simply found themselves

excluded from all possibility of participating in the meetings or even understanding the discussion.

There is, I am well aware, at the bottom of this disagreement regarding the most profitable form of programme for our meetings, a difference of philosophical theory in regard to the nature of truth and the logic by means of which progress may be made in its attainment. I do not think that at present at least there is any liklihood of our coming to see eye to eye with regard to these questions. But I am confident that we can without difficulty reach a practical agreement in regard to our meetings which will at once remove the grounds of existing discontent and also emphasize more than before the idea of cooperating to promote scholarship and research in philosophy.

There would probably be general agreement among the members of the association quite irrespective of any philosophical theory they may hold, that a closely defined and specialized form of philosophical discussion can be carried on successfully only among the members of a group who accept in common (at least provisionally) certain assumptions, and who are sufficiently familiar with one another's accepted logic and terminology to concentrate attention upon the details and technique of the arguments employed. It is evident that the membership of our association does not constitute such a group. Usually one finds that such discussions are most worth while when carried on informally in conversation with a small group of friends; and probably every one values the opportunities afforded by the meetings for such intimate discussion of particular points.

But since we have a considerable group of members who believe that they can most profitably employ a large share of the days devoted to the meetings in "close and prolonged debate," why should not simultaneous sections be organized during certain sessions of the association's meetings? I believe that this would be better than any attempt to hold together by compromising, or "splitting the difference." There would, if this proposal were adopted, still be sessions of the association, as a whole, and I hope discussions in which all might share, but there would be a real gain in division for certain purposes: in providing within the association itself distinct organs for different kinds of work. I believe that my friends, to whom I have just alluded with admiration as modern scholastics and formalists, feel that they have been so hampered by the prejudices of some of the "tenderminded," of whom they wish to be most considerate, that the "organized discussion" has never had an opportunity to show what it is really capable of in the way of establishing true propositions. But if the proposal I have made were adopted, they would be free to develop without hindrance the method of

philosophizing that seems to them most fruitful. And those who believe in a less formally defined mode of cooperation, and who perhaps attach more importance to viewing contemporary problems in the light of the great historical systems, would also be able to do something to promote a form of philosophical scholarship which, through the great emphasis laid upon the discussion, has very largely been lost sight of in our recent meetings.

J. E. CREIGHTON.

CORNELL UNIVERSITY.

THE following have been elected honorary corresponding members of the Aristotelian Society: Professor Emile Boutroux, Dr. Benedetto Croce, Professor John Dewey, and Professor Harald Höffding.

PROFESSOR RALPH BARTON PERRY, of Harvard University, is teaching in the University of Chicago Summer School.

DR. WALTER F. DEARBORN has been promoted to a full professorship in psychology at Harvard University.

DR. A. H. SUTHERLAND, of the University of Illinois, has been appointed instructor in psychology in Yale University.

PROFESSOR R. P. ANGIER has been advanced to the grade of professor in psychology at Yale University.

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PRAGMATISM AND METAPHYSICS

"One can not have his metaphysics and eat it too."

AT the recent meeting of the Western Philosophical Association,[1] the symposium, which had been arranged for the principal session, was given to consideration of immortality, the natural world and God from the three standpoints of idealism, realism, and pragmatism. The questions formally propounded, it is true, were not quite as bold and direct as this statement might imply, being these: (1) In what sense does the human person possess independence of his physical organism and environment? (2) What reality has the history of the world as the physical and biological sciences present it? and (3) Does any being exist that plays the part assigned to God in theistic religion? But the actual discussion was by no means confined to such specific inquiries. The actual discussion, moreover, was nearer to being just one more trial of pragmatism at the court of metaphysics than any mere weighing of the relative merits of the three "isms" represented. Certainly there was no keen interest in any of the issues merely between idealism and realism; these two eminently respectable old-timers showed little if any of their earlier animus towards each other; rather did they seem to be in a dual—or should the philosopher say dualistic?—alliance against the *nouveau vrai* upstart, pragmatism. What matters it after all, exclaimed one of the idealists, perhaps in an unguarded moment, perhaps really not caring, whether we call the objects of experience ideas or things? suggesting, of course, that more serious problems may now be confronting us. And a realist and materialist was equally indifferent in that his "isms" were so critical, so free from naïveté, as to enable him to admit, if not insist, that although the material world, the world of science, can be our only world, nevertheless not any science nor even all the sciences can ever exhaust the nature of that world. From which one can conclude only that the real and material world, however revealed through science, is also transcendent, of course immanently transcendent, of science or of matter

[1] Held in Ann Arbor, Michigan, April 6–7, 1917.

as represented by science and so is itself other than a world of things, being—as proved to be the case—in its own natural right also a world of mind. But a query: Might not an idealist, if waxing sufficiently critical in his turn, as confidently find his ideas to be really, albeit not openly, but only immanently, also things, and so, fully cooperating with our realist and having indeed no serious difference with him, help once more to point the moral of it all that whether things or ideas, matter or mind, is no longer the significant question?

But, to recall a phrase from above, pragmatism on trial at the court of metaphysics might well be said to be pragmatism tested by dualism or by monism, idealistic or materialistic or indifferentistic; and just from this point of view the recent symposium had special interest for the writer, suggesting such reflections as follow. Thus, only to give direction to the present report of these reflections, there is this question: Pragmatism, being at least to all appearances quite indifferent to the basal distinction of a metaphysical dualism, the spirit-matter distinction, as well as to many other distinctions which are in solution in this and which accordingly are supposed to have metaphysical ground, is in what sense if in any sense monistic? How far, if at all, does pragmatism deny the distinctions of dualism? Now pragmatism, I submit, is philosophy; it is neither science nor theology. Theology, and with it morality, commonly leans towards an idealistic monism; science, towards a materialistic monism, as is shown in so much recent science-inspired realism; but philosophy, towards an indifferentistic monism. So, once more, in what sense is pragmatism monistic? What is the peculiar meaning of its indifference?

For answer to this question it is important to recognize at once what is, I think, substantially true, but very easily and quite commonly overlooked, that in the history of philosophy most characteristically, that is, in the non-partisan or indifferentist form, monism has been only a corrective of dualism or—better put—a solvent for all of dualism's metaphysical differences, in short a would-be metaphysical peace-maker. So much, possibly, would or should go without saying. Here, however, is the point. Monism has denied or corrected or resolved dualism only as to some particular setting or context, only as to some historic dualism, whether as expressed openly and completely in the form of somebody's outright assertion or as having the labor of its expression divided, as so often in philosophical standpoints, between the idealists of the time and their contemporary realists. Monism, in other words, has been in practise, whatever it may have been in theory or in its own conceit, never anything more or less than relative—in its correction opposing and often undoing

only some traditional dualism and so at the time even clearing the way for dualism in some new guise, under some new system of values, the spirit-matter or ideal-real distinction finding new expression on some other plane. So, for the notable example, was Spinoza's monism a negation of the medieval dualism. After Spinoza that dualism once for all lost caste metaphysically and became only a standpoint or method, as in psychophysical parallelism or—the division of labor again—in intuitional rationalism and empiricism, both of these being rather epistemological than metaphysical in their intent and value. And, the medieval dualism being changed in this way, metaphysically a new dualism came to reign in its stead. The dualistic difference did not die absolutely, but rose to a new level. Spirit and matter, ideal and real, were as opposed as ever, but each with a new content and value. Similarly, to adduce evidence of the same change from another angle, Spinoza's monism was also the undoing of the medieval individual, but, whether Spinoza directly influenced Leibnitz or not, it also, by reducing all individuals as particularistic entities, spiritual or material, in the realm of thought or in the realm of extension, to so many mere modes, equal and coordinate, of the one substance, cleared the way for that new individualism, at once vital or dynamic and microcosmic, of which Leibnitz's monadism was a most important early modern exponent.

Nor in any estimate of monism, of any positively historic monism as a corrective or solvent of a traditional dualism, can one afford to forget those many special distinctions which are always in solution, as was suggested above, in the basal general distinction,—such distinctions, for example, as God and nature, good and evil, truth and error, subject and object, soul and body, and, not to attempt the very long list, any of the other distinctions inhering in life's various problems. In the case of each one monism brings a reduction of the difference *as having metaphysical ground*, makes it mere formal standpoint or medium, significant only epistemologically, and forecasts, not the absolute passing of it, but some new rendering of it,—the whole movement, moreover, involving some achievement in experience. So conditioned, experience is creative.

To sum up, then, generally as to dualism and specifically as to any of its distinctions, dualism is always historic, or contextual, and it is resolved by an equally historic monism and the resolving monism, being relative to a particular situation, only mediates between a passing dualism and a new dualism, which, however like in terms, is new in meaning or real content. Again, to indicate clearly the mediation, the one-time real and metaphysical becomes epistemological and only mediate, and expresses, but "phenomenally," new reality, a new kind of world. Or, to use a phrase quite commonplace

at least in orthodox epistemology, the mediating "forms of experience," which as related to experience are outgrown realities of experience and always harbor some passing dualism reduced or resolved—Kant's forms, for example, space and time and causality, each with its own antinomy or buried dualism—must always lag behind and do always lag behind the real facts or objects of the experience itself. Do such forms have validity for anything but their mediation, their "working" value? Certainly they can not *represent* the reality which they really mean.

But now: In what sense is pragmatism monistic? Pragmatism is monistic in that it sees experience, if I may here so express the matter, as always moving to the resolution of some dualism, of some distinction between formally incongruous things, of some real problem or conflict, and as always, in the process of the resolution, achieving new reality. But pragmatism is also at least equally dualistic. Only pragmatism, as if catching the meaning of dualism in history, refuses to accept dualism as anything but historic and contextual, as ever in any particular context a metaphysical finality, as ever marking the world's fixed structure or composition. For pragmatism, dualism or any of its many distinctions—and perhaps henceforth it were better known, not abstractly, but only through its specific distinctions in real life—is functional rather than merely and finally structural; life, in other words, having its many dualisms, not just ultimately a single dualism. For pragmatism, once more, neither dualism nor monism can be anything but free principles or general motives of all experience, of any complete experience, both of them being always, let me not say merely present, but active in experience, and so being realities of experience in a sense that no static metaphysics could possibly imagine. To the orthodox metaphysicians this may seem to belittle and discredit the meaning of them both most seriously, but surely it does greatly enhance them. The pragmatic view may discredit them as metaphysical "isms," denying them high places in the metaphysicians' synagogue, but—a change well worth while and very timely—it makes them real and vital in every problem of life that ever finds statement and solution. The dualism-monism movement is seen in every question, problem or experiment, however lowly and commonplace, however ordinary and practical, that ever rises in experience and eventually comes to settlement. Already we have found the whole story historically in the medieval metaphysical dualism, the subsequent psychophysical parallelism, and the present-day pragmatic standpoint, but what is thus written large in history, showing a civilization working out a great problem, is only the typical episode of human experience.

It is, furthermore, at least half-way to this appreciation of prag-

matism for realism and idealism each to have found within its own world the supposed difference between their two worlds or say for each to have found the other's world dwelling with fullness of life quite within its own, even as realism has found "matter" active with so different a thing as "mind" or "spirit"; for, to say the least, with such findings the dualism itself necessarily appears to him who will really look in a new light and acquires new value, becoming rather functional than finally structural as to its distinction or difference or, again, as I think can be said also, rather epistemological than metaphysical, and a functional and epistemological dualism quite satisfies pragmatism. With those findings, then, realism and idealism are already virtually pragmatistic, but they are not yet candidly so; they have not yet arrived. In one way or in the other way the prejudice of a singly structural metaphysics still prevents candor and fulfilment or arrival. The necessary indifferentism is still impossible. So, while a critical realism and materialism and an equally possible critical idealism are excellent fuel for pragmatism, they are not and never can be more than good fuel. They must always need the firing. Real pragmatism must be quite indifferentistic; philosophical, to recall what was said above, not theological and moralistic nor yet scientific.

Pragmatism's interest, as is generally known, is not in matter or mind; it is not in sensuous perception or abstract conception; it is not even in *what just is* under any name or in *what is just known* by any faculty; for these interests and many like them obviously are consequent upon a metaphysical dualism implying ultimate singleness and fixity of the universe's structure and so a mind that can be only either receptive or abstract and a real world whose reality must end with its being and being known. To such a dualism, too, monism could come only negatively, only from outside, only as opposition without use or negation without any solution. But dualism and monism have been shown to be quite different and, consistently, human interest, as represented by the new philosophy, is in situations, problems, experiments, solutions, constructions, achievements and the like,—man's business being no longer to have reality or be it or know it or speculate abstractly merely about it, but, because he has it already, to use it and, using it, to achieve more of it. The metaphysical becoming epistemological, the real becoming mediate or instrumental, the "forms" or instruments so acquired valued for their achievement instead of for their representation or mere formal adaptation—this is human experience as pragmatism feels it. And, again, so conditioned, experience is itself real, a real and living thing—so different from that experience just of something—instead of itself doing something—to which the at last passing dualism had

no choice but to condemn us. Perhaps, after all, pragmatism is more a life or a manner of life than a formal and visible or tangible "ism"; but, if so, it need not be less truly a philosophy; nor need less be expected of it.

But, finally, what of pragmatism and metaphysics? I venture to say that pragmatism, while possibly not satisfying any known metaphysician, is, nevertheless, really big with the metaphysical. To speak more boldly than intelligibly, it so nearly identifies experience with reality as to render a metaphysics gratuitous if not also unseemly. So long as reality was substratal and clothed—with apologies for my metaphorical violence—a metaphysics had some point and, properly timed and placed, was not impertinent. Or, to indulge even in another figure, in its superiority to metaphysics pragmatism can hardly be an exception to the old rule, here slightly paraphrased, that one can not have one's metaphysics and eat it too. Simply in pragmatism the metaphysical cake has been absorbed. If dualism and monism in any way pertain to metaphysics, then, since these "isms" have at last come right up into experience as living principles instead of being speculative and formal assertions about the world beneath or behind experience, pragmatism is—only how shall I put it?—certainly not a metaphysics, but metaphysical at every pore, the cake, I suggest, having proved very rich indeed. If pragmatism may be trusted, the metaphysics of many centuries and many peoples has at last begun to identify itself with human life, reality making itself felt immediately in experience, experience being now seen as a sort of "recapitulation" of Christendom's history, and, being thus put to work, the metaphysical, long abused for idleness and unproductiveness, may end by making for us a new world. When reality works in place of phenomenality, when it succeeds the formal institutions of men, these becoming instruments valid only for what they do, creation must ensue. New life in a new world must be at hand. Pragmatism, then, truly may not satisfy any metaphysician, but at least this may be said of pragmatism: As a standpoint, as distinctly not a metaphysics, it must mean, or at least it may mean, man at last deliberately entering upon adventures in the world of reality, and bent, as he sets out, on really and effectively using reality or on putting all that he himself has found or made to the use of reality and so all in good time on enjoying the creative life of reality thus set free in his own life.

The creative life of reality! To appreciate just what this means here one must recall the indifferentism of pragmatism. The creative life of reality can lie only in a constant union of the ideal and the materially real, of spirit and matter. As an "ism" in history, pragmatism, indifferentist pragmatism, following the medieval dualism

and the subsequent parallelism, calls for candid intercourse, for free and constant interchange, between the values of life and its machinery. Thanks to the too-persistent past, civilization is still suffering from the divorce of these, involving a separation of ends and means, of life's ideal purposes and loyalties and its instruments. Doubtless, at least as must appear in retrospect, such a separation was natural during a militaristic and absolutistic social order. It may have had, too, some point during the earlier years or centuries of the succeeding industrial organization of society, when interest in mere conquest still gave sanction to the principle that life's ends justify any means. But, if industrialism and its accompanying democracy are to prove productive, making some contribution to civilization, the separation can not continue. Thus the soldier, destined for another world, has too long been the romantic figure. The mechanic, master of this world and working for results here, must henceforth take first place in romantic interest. Culture and ideality generally have too long stood aloof, idealizing the past and dreaming, however beautifully, of the future, and practical life, machinery its instrument and science its law, has too long been just practical or "efficient." Culture and efficiency, ideality and practicality, life's deep human values and its nowadays wonderfully devised and wonderfully effective instruments must be wedded as never before, state and school and church all so reorganizing themselves as to make the union, in the first place, quite possible and, in the second place, as it is realized, positively effective. Pragmatism, involving as it does the union of ideality and practicality, or spirituality and real life, of values and instruments, would change the present. Eschewing metaphysics, it would itself realize something.

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THE NATURE OF SCIENTIFIC MATTER

SCIENCE has both form and matter. The form of science known as scientific method is concerned with the ways of observation and experimentation, the kinds of classification, the nature and derivation of scientific laws, and the like. It is the machinery which transforms mere fact into scientific knowledge. It has been carefully examined and is discussed in nearly every book on logic. There has been a tacit assumption, moreover, that the form is all there is to science; that it makes no difference what the matter is so long as the form is correct; that, in short, any rubbish can be put into the machine and come out science. The assumption simply is not true. Just as much care has to be taken of the matter of science as of its

form. If not, the machine clogs at a certain point and the matter can not be refined any further. Yet the matter of science has been most strangely neglected.

The matter of science is what science describes, the objects about which laws are made. With a few exceptions it is the data of science. Now, unless science is to be a mere catalogue of curious events, it is apparent that facts must be comparable with one another. Without the means of comparing facts no laws could be made, no system organized. High degree of system is possible only where there is high degree of comparability. Consequently, just as the degree of advancement of a science may be estimated on its formal side by its degree of systematization, it may be estimated on its material side by its degree of comparability. The principle which governs the material side of science throughout is comparability. The evolution of scientific matter appears as a continuous endeavor to reach a least common denominator of facts.

This endeavor is marked by three stages: First, an interpretation of all facts in terms of data of a common sense. Secondly, a reduction of these data to certain entities called units. Thirdly, a reduction of these units to certain elementary units. I will examine each of these stages separately.

First, it is necessary to find an interpretation of all facts in terms of a common sense. For if we cast off for a moment all our scientific learning and consider the various senses as the simplest savage might, they will appear to us as so many little islands with impassable gulfs between. How could one see a sound, how taste a sight, or smell a prick? Each sense seems cut off from every other, and there seems to be no means of communication among them. Yet in spite of this apparent incommunicability, we know that a single object can be experienced in a multitude of senses. I see a rose, hear its rustle, smell its fragrant odor, and am pricked by its thorns. There seems to be a certain parallelism of the senses such that within limits they can be compared point for point. We can not see roughness, but we can see a corrugated surface and correctly interpret that as roughness. Then we can dispense with the sense of touch so far as it informs of roughness.

This power of interpreting one sense in terms of another is extremely important for science. For our experience, the crude facts, comes to us through many senses, so that if we could not interpret one sense in terms of another, the facts coming to us from each of the senses would be totally isolated from those coming to us from any of the others. Comparability of facts would then only be possible within a sense. There might be many little sciences, one for each sense, but no science. The first step therefore, that science must

make towards comparability of facts is the interpretation of all facts in terms of a single sense. What sense will that be?

Just exactly why *a priori* science should choose sight, I do not know. There is no one characteristic by which sight can claim a clear superiority above all the other senses. It is very sensitive, but probably not more so than hearing or even smell. It has one great advantage over hearing and smell, however, in that it can sense a number of objects at the same time clearly distinguished from one another, while hearing and smell blend and confuse their objects. But sight must share this advantage with any of the touch senses. The combination of clearness and delicacy, however, makes a sense peculiarly well adapted for measurement. Besides, sight is the best distance sense, the most accurate in determining directions as well as the one able to inform of objects furthest away. It is probably the combination of all these qualities rather than any one of them that decided scientific preference in its favor.

But if there is no incontrovertible *a priori* proof why sight should be the scientific sense, there is abundant *a posteriori* proof in the sciences. I shall summarize the data employed in determining the principal facts in the science of sound. It is apparent that the natural sense to use in observing the facts of sound is hearing, and if sight is employed even here, there must be a strong predisposition on the part of science in favor of sight.

The principal facts about sound are pitch, loudness, quality, velocity, reflection, refraction, and interference.

The pitch of sound is determined by the number of vibrations per second in the air. The commonest instrument for the determination of pitch is the siren. The siren in principle is a revolving disk with a given number of holes in it, through which air can be driven. By means of a mechanical counter the number of revolutions of the disk per second can be seen. Multiplying the number of holes in the disk by the number of revolutions per second it makes, one gets the number of vibrations per second produced, which is the pitch of the sound. The ear is of no avail in the experiment.

In comparing some note of given pitch, however, with the siren in order to determine the pitch of the given note, the ear is often used to tell when the note of the siren is the same as that of the given note. But if great accuracy is desired, as in the comparison of tuning-forks, the ear is deprived even of this function. For when a mirror is attached to the end of a vibrating fork and made to cast a beam of light on a screen, the light will make a characteristic line on the screen. When, then, a beam of light has been reflected to this first fork from a mirror attached to another fork vibrating at right angles to the first one, certain characteristic figures (Lissajous's figures)

will be made on the screen, which determine with great accuracy the relative frequencies of the two forks. Thus vision again displaces hearing.

In determining loudness, hearing alone is used. But very little space in physics is devoted to the loudness of sound. It is usually just mentioned. The following quotation from Poynting is significant: "Up to the present time no simple and satisfactory method of measuring loudness has been devised, since it never has been of practical importance to obtain a measure."[1] That is to say, scientists have not yet become much interested in the loudness of sound. Hence it is still described in terms of hearing.

Until recently the ear had to be used as a detector in determining the quality of sound, though sight did all the rest of the work. The quality of sound, it was discovered, is attributable to the composition of the waves. Helmholtz devised a scheme to analyze waves by means of resonators—metal bulbs so constructed as to vibrate sympathetically only to a given frequency of vibration. These were put to the ear and the complex sound in question given. If the resonator could be heard, the experimenter might be sure the complex sound had the note of the resonator as one of its components. What the note of the resonator was would have to be determined previously by one of the methods described above for determining pitch. Most of the material in Helmholtz's experiment, therefore, was visual, though the ear had to be employed as a detector.

But Ames writes: "In the best and most recent work on the analysis of sounds, phonographs are used, and the traces magnified."[2] In the best work, therefore, the data are entirely visual.

The most careful experiments on the velocity of sound were performed by Regnault. The source of the sound was the firing of a pistol. As soon as the shot went off, it cut a wire across the muzzle of the pistol. That broke an electric circuit and registered the time of firing on the revolving drum of a chronograph. The sound wave was received at a distant station by a wide cone fixed to a cylinder which was closed at the further end by an india-rubber membrane. In the middle of the membrane was a light metal disk, so that when the membrane was driven back by the impact of the sound wave, the disk touched a metal point, completing an electric circuit which was immediately registered on the drum of the same chronograph that registered the time of firing. The data from the measurement of the distances between the pistol and the membrane and the data from the drum of the chronograph constituted all the data for determining the velocity of sound, and all the data are visual.

For experiments on reflection, refraction, and interference of

[1] Poynting and Thomson, *A Text-book of Physics*, "Sound," 1914, p. 8.
[2] J. S. Ames, *A Text-book of General Physics*, pp. 396–397.

sound, the ear is sometimes used as a detector, but more frequently Koenig's manometric flame. This flame is a gas jet issuing from a pinhole burner, the pressure of the gas being so regulated that the flame is on the verge of flaring and will flare on the least disturbance in the air. If great accuracy is desired, the flame can be reflected in a revolving mirror in which every movement it makes can be plainly seen. In this form the flame is useful not only as a mere detector, but as a direct means of determining the frequency and composition of sound waves.

All the other data in experiments on reflection, refraction, and interference of sound—such as wall surfaces, rudder lenses, and interference tubes, and the various measurements of these—are in visual terms. Hence, when these experiments are carefully performed with Koenig's flame as a detector they are completely in terms of sight.

Summing up, we find that the great bulk of data in the science of sound is visual; that in all the most accurate and careful experiments, visual data alone are used; that in experiments of a lesser degree of accuracy, the ear is used as a detector, but the rest of the data are visual; and that loudness alone appears to depend wholly on auditory data, but that physicists hasten to apologize for their neglect of the subject and the crudeness of their data for it.

Thus the science of sound exhibits a strong tendency away from the sense of hearing in the selection of its data and towards the sense of sight. A similar tendency may be observed in the science of heat, where one would naturally expect the data to be selected by the senses of warmth and cold. Also one would expect chemical data to be selected by the chemical senses, taste and smell. Yet in all these sciences sight is preferred. It is evident, therefore, that sight is the sense chosen to accomplish the first step towards universal comparability of facts, the sense in terms of which all facts must be stated in order to have a lasting scientific value.

But it is also evident that the reduction of all facts to visual data is only a first crude step towards comparability. The second step becomes necessary—the reduction of visual data to units. Examples of scientific units are atoms, molecules, centimeters, grams, ergs, volts, amperes, ether waves, air waves, degrees Centigrade, degrees Fahrenheit, biological cells, *etc., etc.* But what is a scientific unit?

The first notion that occurs to one is that it must be the smallest datum of a group of data—*i. e.*, of a science—for how could a smaller datum be reduced to a larger datum? We are, however, constantly reducing smaller to larger data. The scientific unit of length is the length of a certain platinum bar in Paris when at a temperature of zero degrees Centigrade. It is known as a meter. But most scientific

facts are stated in terms of a centimeter, which is a hundredth part of a meter, and it is not infrequent to hear of thousandths of a centimeter or even smaller fractions. The unit of length, therefore, is not the smallest length ever measured in physics, but a relatively long length. Practically all mechanical, electrical, and thermal units are of this kind. On the other hand, there are units that are not divisible, and are consequently the smallest in the science that treats of them: for instance, the cell of biology. Nothing can, therefore, be asserted offhand concerning the size of a scientific unit.

The next thought that occurs to one is that a scientific unit must be a purely arbitrary thing. Under certain circumstances it is arbitrary within limits—arbitrary in the same way the choice of the common denominator of a group of fractions is. Any multiple of the least common denominator of a group of fractions would do for comparing them, but arbitrarily the least common denominator is chosen. The arbitrariness of the choice lies only within the multiples of the least common denominator. The choice of some one among the multiples is necessary. In the same way certain units are arbitrarily chosen, as, for instance, the unit of length. Any length would have done for a unit. The choice was arbitrary among lengths. But the unit was necessarily some length. One can not measure the height of a man by sourness or the distance across the Atlantic by claps of thunder. Yet in certain cases, where, so to speak, there is no multiple, the choice of the unit is absolutely necessary, as, for instance, the atom of chemistry.

A scientific unit, therefore, is not necessarily the smallest datum in a science, nor is it ever entirely an arbitrarily chosen datum. A curious characteristic of some units still remains to be mentioned. A unit need not necessarily be a datum at all. I am thinking of the atom, the air wave, the ether wave, and such units. This characteristic is especially astonishing when one reflects that the first step towards comparability of facts is a reduction of all facts to visual terms. In these units, the labor of that first step is apparently thrown away. Only apparently, however, for in every case of this kind the unit is one that could be seen if vision were sufficiently acute. The unit is in visual terms, though invisible. If it were not in visual terms, it could not possibly make visual data comparable, which is its function.

We may, then, define a scientific unit as an entity in visual terms by means of which visual data are rendered comparable. Those data which a unit renders comparable form a group in virtue of that fact. Such a group is called a science. A science, then, is formed and defined by its units. I say "units" in the plural because in some cases it takes several units to render a group of data comparable, and the

science would consequently have to be defined by all the units together. Mechanics is a case in point, where groups of data become comparable only through the combined agency of four units—the centimeter, the gram, the second, and the radian. Usually, however, one unit is enough, as, for instance, in biology the cell, in anthropology the man.

The state of science brought about by the second step in scientific evolution is, then, a multitude of isolated sciences, each of which is defined by one or a few units, which render comparable a large group of facts. There is thus zoology defined by the unit, animal; botany by the unit, plant; biology by the unit, cell; chemistry by the unit, atom; mechanics by the four units just mentioned, *etc.*

But this is manifestly not a final state of science. To have isolated sciences, not to be able to compare the facts of one science with those of another, is too provoking to be long endured. Hence, the third stage in scientific evolution arises, in which units are made comparable with one another. The sign of this stage is the appearance of a distinction between elementary and derived units. As soon as this distinction is recognized, two processes take place: On the one hand, old units defining isolated sciences are ordered and made dependent on one another—some being made elementary, others derived. On the other hand, new derived units spring into existence depending upon the original units which defined the isolated sciences. Altogether, there takes place among the sciences at the same time a tremendous consolidation and a most intricate differentiation.

An example of the first process is the consolidation of botany, zoology, anthropology, physiology, and numberless other more or less isolated sciences of a century ago into the one big science of biology. The cell is the elementary unit from which the units plant, animal, man, tissue are derived. Botany, zoology, anthropology, physiology, *etc.*, are derived sciences dependent on biology.

An example of the second process is mechanics. This science, as I just said, is based upon four elementary units—the centimeter, the gram, the second, and the radian—from which no less than nine derived units have been made. They are the following:

1. cm. x cm. = unit of area, or square cm.
2. cm. x cm. x cm. = unit of volume, or cubic cm.
3. $\frac{\text{gm.}}{\text{cm. x cm. x cm.}}$ = unit of density, unnamed.
4. $\frac{\text{cm.}}{\text{sec.}}$ = unit of velocity, unnamed.
5. $\frac{\text{r}}{\text{sec.}}$ = unit of angle velocity, unnamed.

6. $\frac{\text{cm.}}{\text{sec. x sec.}}$ = unit of acceleration, unnamed.

7. $\frac{\text{gm. x cm.}}{\text{sec.}}$ = unit of momentum, unnamed.

8. $\frac{\text{gm. x cm.}}{\text{sec. x sec.}}$ = unit of force, or dyne.

9. $\frac{\text{gm. x cm. x cm.}}{\text{sec. x sec.}}$ = unit of energy, or erg.

These derived units were quite literally derived from their elementary units. That is to say, the dyne, for instance, was built up out of centimeters, grams, and seconds; it did not break down into centimeters, grams and seconds. The process here is exactly the opposite from the first process, though the result in the two cases is the same, *viz.*, comparability of units. In the former case, analysis shows certain units to be derived from other elementary units. In the latter case, synthesis shows derived units composed of elementary ones. The two processes go on more or less together, and are mutually helpful. For example, by analysis cells have been broken up into their chemical constituents, and thus proved to be units derived from atoms; at the same time, by synthesis atoms have been put together and things that are virtually cells constructed, thus proving again that cells are derived from atoms. At once, the facts of biology and chemistry become comparable.

The final result towards which this third step in the evolution of scientific data aims is a complete comparability of facts throughout the whole range of knowledge, brought about by an arrangement of units such that all units are derived from a certain few elementary ones. Science is already sufficiently advanced to indicate what those elementary units will be. They will be the centimeter, gram, second, and radian.

For all the physical sciences flow directly into these four units. Chemistry is in terms of atoms; and atoms are characterized by their relative weights and are theoretically, at least, regarded as centers of force, both of which facts point to their ultimate reduction into terms of centimeters, grams, seconds, and radians. Biology is founded on the cell, and the cell, as I observed, is derived from the atom, so that ultimately cells also would be derived from centimeters, grams, seconds, and radians. The big established sciences, therefore, —physics, chemistry, and biology—are rapidly rolling towards the consummation of scientific evolution, towards complete comparability of all facts whatsoever through the interpretation of them in terms of the ultimate elementary scientific units, the centimeter, the gram, the second, and the radian.

Thus we see in a wide way what science is doing on its material

side. It is making a continuous endeavor to reduce all facts to a single least common denominator through which alone a universal comparison of facts is possible. Its first step in this endeavor is to sift out of the facts all except visual data. Auditory, olfactory, tactual—all kinds of data other than visual data are retained only in the complete absence of pertinent visual data.

The second step is to mold these visual data into a system of units —centimeters, cells, atoms, *etc.*—by means of which bodies of knowledge are separated. Within these bodies of knowledge all facts are comparable, and each body is known as a science. These bodies of knowledge are scattered, more or less isolated, standing to each other very much as one nation stands to another in a nationalistic state of society. There is complete comparability of facts within a body of knowledge defined by scientific units, but there is virtually no comparability of facts between the different bodies of knowledge.

Then the third step is the organization of the units themselves into a system where each unit is comparable with each other unit, and where consequently any fact of any body of knowledge is comparable with any fact of any other body of knowledge. This step is accomplished by subordinating units to one another, and calling the fundamental units elementary and the subordinate ones derived. The final result of this third step will be the subordination of all units to a few fundamental ones. We are even able to foretell what these fundamental units will be. They will be the centimeter, the gram, the second, and the radian. When all science is interpretable in terms of these units, it will have reached its goal on its material side.

From the crude fact to the visual datum, from the visual datum to the scientific unit, from the scientific unit to the organization of units, and the ultimate interpretation of the fact in terms of centimeters, grams, seconds, and radians—we see the transformation of sensation into scientific knowledge.

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DUALITY AND DUALISM

IN what follows I am not to be understood as arguing in behalf of epistemological monism. So far as I know I have not a chemical trace of interest in it. And if my argument does not on that account run in behalf of epistemological dualism, it is because dualism appears to me only two monisms stuck loosely together, so that all the difficulties in monism are in it multiplied by two. If my position must be labeled, I should prefer to call it empirical pluralism, for it is actuated by respect for the plurality of observable facts.

To my mind the logic of Dr. Drake[1] is unduly simplified. It amounts to assuming that wherever you have numerical duality in perceiving there you have epistemological dualism. Now there is numerical duality in perception, namely, the difference in time and place, *etc.*, of the organic event of sensing, imagining, *etc.*, from that of its extra-organic cause. Consequently there is epistemological dualism. Q.E.D. Whether this argument affects the monistic realists or not is for them to determine. But an empirical pluralist is certainly untouched by it. To him the duality is also a triplicity, a fourness, a fiveness, . . .; and in addition the numerical diversity, however great or small, has nothing to do with knowledge. It is of precisely the same nature as the numerical diversity in any train of events which is construed as causes-effects—or antecedents-consequents. The affair of knowledge enters in only when one of the series is *used* as evidence for inferring some other one in the series, whether antecedent to it or consequent upon it. Only when the numerical diversity of evidence and what is inferred from it becomes an adequate ground for epistemological dualism, will the numerical duality of extra-organic cause and intra-organic event, which is found in all perceptions, even set a problem for an empirical pluralist.

I might well leave the matter here. But it happens that Dr. Drake uses terms which show what the cause of his difficulty is. He says: "The question is: Do the images exist in the object, are they numerically identical with some parts of it, or, are they numerically different, existing at other points in space, and only similar to it and representative of it"? Now so far as his reference to me is concerned (and the same holds as to his earlier article),[2] the last clause, "similar to it and representative of it," shows that he has missed the point of my analysis of perception and of knowledge by means of perception. For Dr. Drake assumes that I must hold what he holds; namely, that the organic sensory-cerebral event (sensation-image in the usual phraseology) *is* intrinsically *representative* of its extra-organic cause; in short, is in its very occurrence a fact of the knowledge order or genus. Now this is just what I deny, holding that the event *becomes* cognitive only when *used* as representative, that is to say, as evidence for inferring some other event. Smoke is numerically different from fire, has (or may have) a different locus in space, exists at a different time, *etc.* But it is not inherently representative of fire, although we learn to use it as sign or evidence or representation of fire. This sort of physical numerical duality is literally that which I find figuring in all knowledge. And as I have already said, there is always *more* than duality. The smoke affects my nostrils—there is a smell; my eyes—there is a sight. The smell, the

[1] This JOURNAL, Vol. XIV., especially pp. 368–69.

[2] This JOURNAL, Vol. IX., p. 152.

sight affect my brain, my muscles. A whole series of physical effects is found in every case of the happening of sensory responses. A popular account would be content to say that we go direct from smoke to inferring fire. A more careful one will say that we go from an intra-organic event to smoke and from that to fire. But this is the difference between a more careful and extensive account and a rougher, more summary account. It is a difference in the detail of a series continuously physical in all its constituents. At no point is there a switch from one order or genus of Being to another. And without such a switch there is neither epistemological dualism nor does the demand for an epistemological monism arise. The key to the notion that there is such a switch (to be formulated in a dualism or explained away in a monism) arises from failing to note that representation is an *evidential function* which supervenes upon an occurrence, and from treating it as an inherent part of the structure of the organic events found in sensings. There are no physical events which contain representation of other events as part of their structure. Hence a separate world called psychical is provided for these hasty products of elision and telescoping.

To avoid misunderstanding let me say that the retort that the smoke is not a "conscious datum" while sensations and cerebral events are conscious data is not a reply, but a repetition of the same ignoring of the position. For the position herein recapitulated holds that to call anything "conscious" (so far as the requirements of this argument concern the word) is simply to say that it figures within the inferential or evidential function.

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REVIEWS AND ABSTRACTS OF LITERATURE

Wissenschaftslehre. B. BOLZANO. *Hauptwerke der Philosophie in original getreuen Neudrucken.* Band VII. Neu herausgegeben von Alois Häfler. Leipzig: Verlag von Felix Meiner, 1914. Zweiter Band. Pp. viii + 568.

In Volume II. of the *Wissenschaftslehre,* Bolzano continues[1] his exposition of the "elementary theory" of which the first part was considered in Volume I. The second part Bolzano devotes to general qualities of propositions and classification of propositions. This classification is made first, with reference to properties (Vol. I., § 80) and second, with reference to relations. A final chapter of the second part contains an exposition of propositions containing terms having

[1] The first volume of the *Wissenschaftslehre* was reviewed in this JOURNAL, Vol. XIII., p. 328.

a technical logical signification. An elaborate and valuable historical account of the subject-matter of the second part is added. The third part deals with true propositions. The fourth part has to do with inferences; this part is also accompanied by an historical appendix.

The second part of the elementary theory, to which more than one half of the volume is devoted, treats of propositions in themselves following a scheme closely resembling that which underlies Bolzano's discussion of representations (ideas) in the first part. In sections 123–129 the proposition as a complex concept is considered; these sections may be roughly correlated with sections 38, 54, 55, 57, 76, 79, 81 of Russell's *Principles of Mathematics*. Corresponding to the domain of a representation, the domain of a proposition is introduced, as well as its extension (§§ 130, 131, p. 25). Bolzano assumes that the domain of a proposition is the same as the domain of its subject-representation (*cf.* §§ 66, 151–153). All true propositions have at least one object in their domain; there are propositions with an empty domain (§ 146), but these are *false* (§§ 137, 138, 154, 4, § 160, note). Thus the propositions "round squares are virtuous" and "round squares are not virtuous" are both false. In making this assumption Bolzano is confronted with the task of reconciling the falsity of propositions of the preceding type with the truth of propositions such as "round squares do not exist." This problem (pp. 329, 330, 404) Bolzano attempts to solve by recourse to a theory of "representation of a representation" (*cf.* symbolic representations, § 90). Underlying this problem are such logical subtleties as the truth of falsity,[2] the validity of non-validity,[3] the extension of a class which has no extension,[4] the agreement of contradictoriness,[5] the predicability of non-predication,[6] denoting concept which denotes nothing,[4] *etc.* In this connection Bolzano has rather inadequately discussed "nothing" (§ 170). The convention which Bolzano has adopted in regard to the proposition with an empty domain is opposed to the assumption of certain modern logicians,[6] while others[7] take a mediating attitude. The problem is, of course, one of modern interest[8] whose definite solution has not yet been found. A remarkable feature of the problem is its relativity. Bolzano's specific con-

[2] *Cf.* Plato, *Theætetus*, 189, Sophist, 237.

[3] *Cf.* A. Liebert, *Kant Studien*, Ergänzungshefte, No. 32, pp. 8, 143.

[4] *Cf.* Russell, *Principles of Mathematics*, §§ 36, 41, 73, 78, 100, *etc.*

[5] *Cf.* Bolzano, *Wissenschaftslehre*, Vol. II., pp. 402, 403, 421–22, 435–37, 447, *etc.*

[6] See Russell, *Principles of Mathematics*, § 73; *Principia Mathematica*, Vol. I., p. 67.

[7] For example, Peirce, *American Journal of Mathematics*, Vol. VII., p. 187.

[8] See *The New Realism*, p. 485; *Kant Studien*, Ergänzungshefte No. 26, especially pp. 104–106, 131; James, *Psychology*, Vol. I., p. 463.

vention is formally desirable in the theory of the truth or falsity of an aggregate of propositions (§ 160). A doctrine of "empty" truth[9] is convenient in the foundations of geometry; in the theory of the working hypothesis a category of irrelevancy[10] is naturally suggested. It may be added that just as in Bolzano's theory the proposition "round squares do not exist" requires explanation, so the proposition "round squares exist" is a source of embarrassment to the uniform validity of the theory of "empty" truth.

In Chapter II. Bolzano defines simple and complex, conceptual and perceptual propositions (§§ 132–133; *cf.* § 221); propositions with representations of aggregates (§ 135) of negation (§ 136); propositions determining the domain of a representation (§§ 137–139; *cf.* §§ 173, 196); propositions expressing relations between representations (§ 140); existential (§ 142); problem setting (§§ 143, 145); and convertible propositions (§ 149). In sections 147–148 certain other properties of propositions are defined by means of a technique which I shall call Bolzano's *functional operation* on given representations, propositions, *etc.* Bolzano applies this operation rather systematically in his second volume. This operation is used also in the first volume; indeed, Bolzano states (p. 314): "In the sequel we shall frequently employ the variability of certain components of a representation and the derivation of new representations by the substitution of arbitrary representations for these components." On Bolzano's functional operation are based the validity of a proposition (§ 147), the distinction between analytic and synthetic propositions (§§ 148, 197), consistence and inconsistence of propositions (§ 154–159), the independence[11] of propositions (§160), the comparative validity or probability of a proposition (§ 161), the (implicative) relation between truths called *"Abfolge"* (§ 162) and the theories in sections 164–168 which are correlated with sections 154–162. In Chapter V. of the second part Bolzano's functional operation is referred to only indirectly, *e. g.*, sections 179, 180, which discuss propositions of the form "If . . . then . . ." and "A determines B."[12] Bolzano asserts (§ 154) that the most important rela-

[9] See, for example, E. V. Huntington, *Mathematische Annalen*, Vol. 73 (1912–13), pp. 549, 550; Huntington's term "inoperative" appears to have been suggested by my term "ineffective" (*Amer. Journal of Math.*, 1909, pp. 380, 381).

[10] *Cf.* Courant, *Journal für die reine und angewandte Mathematik*, Vol. 144, p. 190; A. R. Schweitzer, *Revue de Métaphysique et de Morale*, 1914, p. 176.

[11] The term "independence" which I have used above should be compared with Bolzano's term, pp. 144, 323, *etc.* Another mathematical sense of the term occurs, *e. g.*, in Grassmanns *Extensive Algebra* (*cf.* Bolzano, Vol. II., p. 227, 2), p. 238, Vol. I., 1 (Coll. Works).

[12] *Cf.* Russell, *Principles of Mathematics*, p. 383.

tions among propositions are those arising from the application of his functional operation. Incidentally, Bolzano has thoroughly anticipated Russell's "propositional function"; this is evident from § 147, p. 78, § 233, p. 427, § 223, p. 394, § 162, p. 192, *etc.* One of the most striking of Bolzano's anticipations and which, so far as I know, has not been noticed before, is presented by his theory of relations among an aggregate of propositions arising from their truth or falsity. Here Bolzano, in effect, gives a very complete account of the current theory of so-called independence of propositions in formal logic and mathematics; in fact Bolzano's theory of independence is far more comprehensive. In beginning his discussion Bolzano states (p. 163, *cf.* § 155 p. 113): "For the discovery of new truths it is of the highest importance to know of the truth or falsity of propositions in a certain aggregate and to ascertain how many of these propositions are true or false, the propositions having the expressions as presented, or the infinitely many expressions which these propositions may assume when certain of their parts are arbitrarily varied." This view has been brilliantly confirmed by the modern developments of mathematics, notably non-Euclidean geometry and the independent investigations of Hilbert in his celebrated *Foundations of Geometry*. Among the special cases (pp. 163–170) of the preceding problem, which I shall call "Bolzano's unconditioned problem of independence" Bolzano cites (pp. 163, 2; 167, 7) an aggregate of propositions giving rise to a variable number of true propositions including as extreme cases the verification and contradiction of the entire aggregate. To express this variability notationally, let $P_1\ P_2, \ldots P_n$ be an aggregate of n propositions ($n = 2, 3, \ldots$) with representations $i, j, \ldots$ for which representations are arbitrarily substituted. Then let Σ be any set of n corresponding false propositions which thus arise, Σ_{i_1} ($i_1 = 1, 2, \ldots n$) be any set of derived propositions such that the propositions derived from P_{i_1} is true and the remaining derived propositions are false; $\Sigma_{i_1 i_2}$ ($i_1\ i_2 = 1, 2, \ldots n, i_1 < i_2$) is any set of $[n(n-1)]/2.1$ derived propositions such that the propositions derived from P_{i_1}, P_{i_2} are true and the remaining derived propositions are false, and so on; finally $\Sigma_{12\ldots n}$ is any set of n derived propositions which correspond to $P_1, P_2, \ldots P_n$, and are all true. We have thus exhibited the range of Bolzano's variable relation based on the truth or falsity of propositions derived from a given aggregate by means of his functional operation; and, of course, for specific aggregates one or more of the sets $\Sigma, \Sigma_{i_1}, \Sigma_{i_1 i_2}, \Sigma_{i_1 i_2 i_3} \ldots$ may be "non-existent," *i. e.*, contain no propositions. In the specific example given by Bolzano (pp. 167, 170), namely, "Some X are A" and "Some X are not A" which we take as P_1 and P_2, respectively, the sets $\Sigma, \Sigma_1, \Sigma_2, \Sigma_{12}$ are all

"existent" when X is variable, as Bolzano explicitly mentions. For according to Bolzano's assumption (discussed above) when a representation with no object is substituted for X, the propositions which arise have an empty domain and are false. Examples of a relation among propositions in mathematics in close analogy with the above have recently been given.[13] With the preceding unconditioned problem of independence Bolzano has correlated a conditioned problem (p. 167) as follows: "Especially remarkable and pertinent in the theory of relations of propositions is the restriction of the variability of representations $i, j \ldots$ by certain other propositions, in particular by requiring that only such representations be selected which *verify* certain other propositions." In connection with the preceding problems of independence it is noteworthy that Bolzano actually mentions (p. 166) an example from mathematics, namely, if A, B, C are three arbitrary non-collinear points in a Euclidean plane then (certain) two of the following relations are always verified:

$$\begin{array}{lll} \text{angle } A = \text{angle } B & \text{ang. } A < \text{ang. } B & \text{ang. } A > \text{ang. } B. \\ \text{segment } AC = \text{segment } BC & \text{seg. } AC > \text{seg. } BC & \text{seg. } AC < \text{seg. } BC. \end{array}$$

This example illustrates the following unconditioned type of independence according to Bolzano: "The number of true or false propositions in the aggregate $M, N, O, \ldots$ is known and this number is invariant under the substitution of arbitrary representations for the representations $i, j, \ldots$ in these propositions." I should say that the preceding example illustrates the conditioned correlative of this type. The modern notion of independence[14] in the foundations of geometry is easily subordinated under the latter conditioned type; here the invariant number, say I, of (properly) false propositions is unity and the range of variability of the set of associated representations $i, j, \ldots$ is finite, having a number, say N, equal to the number of propositions $P_1, P_2, \ldots P_n$ $(n > 1)$ presented.[15] Although Bolzano clearly sees the value of the problem of independence in discovery, he does not seem to recognize the practical use of this problem as an instrument in logical economy; tendencies in the latter direction are indicated by p. 164, 2, p. 123, 26, p. 165, 4 and elsewhere.

In section 96 (Volume I.) Bolzano defines the convertibility, *i. e.*, same validity, of representations. In section 156 he defines the same

[13] *Cf.* A. R. Schweitzer, *Bull. Amer. Math. Soc.*, Vol. 19, p. 70. E. V. Huntington, *ibid.*, Vol. 23, p. 276, where further references are given.

[14] *Cf.* Peano, *Rivista di Matematica*, Vol. IV., p. 62.

[15] Above type of independence admits obviously an extension to $I < n$, and $N = \dfrac{n(n-1)\cdots(n-I+1)}{I(I-1)\cdots\cdots 1}$.

validity or equivalence of propositions (*cf.* § 149). The validity of a proposition itself is defined (§ 147) thus: Consider the aggregate of different true propositions derived from a given proposition by the substitution (according to a certain rule) of representations for certain representations contained in the propositions; then the validity is the relation of this set of true propositions to the entire set derived as indicated. The corresponding degree of validity is a fraction with the limiting values 0, 1 (pp. 81, 82). The validity, then, determines the degree of probability of a given proposition under certain conditions. Evidently it is a relative concept, since for a given proposition it depends on the representations assumed to be variable. Analogous to the validity of a proposition is the comparative validity (§ 161) of a proposition *M* with reference to the propositions *A, B, C, D*. . . . where in the latter the representations *i, j*, . . . are considered variable and the propositions themselves are in the relation of consistence (§ 154) with regard to these variable representations. That is, Bolzano here defines the *probability* of a proposition *M* with reference to the propositions *A, B, C, D*. . . . In section 162 a distinction between "external" and "internal" probability is made. As a magnitude, probability is a fraction with the limiting values 0, 1 (p. 172). Bolzano has made a valuable contribution to the logic of the classic theory of probability of Lacroix and Laplace (*cf.* p. 189) by his sharp formulations of fundamental concepts of this theory by means of propositions; this might be adopted with advantage in our modern treatises.[16] Bolzano's use of his functional operation in probability is paralleled by Couturat's application[17] of the "propositional function" to probability.

The third part of the elementary theory discusses exclusively true propositions and relations between these. The most remarkable of such relations Bolzano regards that of *"Abfolge,"* in virtue of which certain truths are the reason (*Grund*) of others and the latter are in turn the consequence (*Folge*) of the former; in a technical sense, the relation is *dependence* (p. 323, § 221). The relation of *"Abfolge"* is mentioned in sections 162, 168 of the second part of the elementary theory; in particular in section 162, page 193. Bolzano applies to this relation the terms "material" and "formal." The formal *"Abfolge"* is a species of derivation (*Ableitbarkeit*). The concept "derivation" is discussed in sections 155–157, 162, 164. The relation of *"Abfolge"* is compared with derivation in sections 198, 200 and with causality in section 201. In sections 202, 203 Bolzano expresses the opinion that *"Abfolge"* is a simple concept; in section 221, page 388, he confesses that he sometimes suspects this relation to

[16] See, for instance, A. A. Markoff, *Wahrscheinlichkeitsrechnung*, Leipzig, 1912.

[17] *Encyclopædia of the Philosophical Sciences*, Vol. I., p. 154.

be complex and to be merely the concept of an order among truths such that from the smallest number of simple premises the largest possible number of remaining truths are derived as conclusions, *i. e.*, Bolzano suspects that "*Abfolge*" may be merged into derivation (*cf.* pp. 128–347). The relation of derivation holds between propositions "*ueberhaupt*" (§ 200) and anticipates, in essential respects, Russell's formal implication.[18] In sections 164, 179 (*cf.* § 177) Bolzano notes that the relation expressed by "if" and "then" is used to express derivation. It will be recalled that Russell[19] has observed that implication is involved in this relation. One form of Russell's material implication occurs incidentally in Bolzano's theory of derivation (p. 114); the other form, *viz.*, "implication between propositions not containing variables" (Russell, *loc. cit.*, p. 11) seems taken account of by Bolzano (§ 179) in the following words: "I do not believe that in every case in which an if and then is applied representations are regarded as variable . . . without disturbing the truth of the proposition . . . we frequently employ the if and then when no representations are regarded as variable in the compared propositions." Nevertheless, the example that Bolzano gives, "If x_0, x_1, are given integral numbers, $x_0 = 10\ \alpha_1 + \alpha_2$, $x_1 = 10\ \alpha_2 + \alpha_1$ then $x_0 - x_1$ is divisible by 9" is not, at least according to Russell (*loc. cit.*, p. 6), an illustration of Bolzano's point. It is doubtful if Bolzano recognized the extreme[20] to which material implication can be carried. Bolzano would certainly disagree with Russell's assumption[21] that implication holds between any two propositions provided the first be false or the second true. In fact, Bolzano clearly indicates (p. 483) that he regards such statements as "The square is round implies Caius is immortal" as false.

The fourth part of the elementary theory concludes Volume II. of the *Wissenschaftslehre*. This part consists primarily of developments based on the relation of derivation (*cf.* p. 128). In section 226 Bolzano explains the nature of mathematical equality, anticipating, for instance, Grassmann,[22] and points out the forms of inference on which demonstrations of equality depend (pp. 407–409). Representations with no objects in their relation to inference are persistently mentioned, for example, in sections 225, 230, 234, 236, *etc.;* in particular, in sections 234–236, inferences grounded on the denial that representations have objects, are exhibited (*cf.* 55, note). In section 247 the systematic application of Bolzano's functional operation is resumed; sections 247–253 treat inferences drawn from propositions

[18] *Principles of Mathematics*, pp. 14, 16, 33, 36, 106.
[19] Russell, *loc. cit.*, Ch. III.
[20] *Cf.* Bergmann, *Das philosophische Werk Bolzano's*, pp. 81, 89, 90.
[21] *Cf.* J. B. Shaw, *Bull. Am. Math. Soc.*, Vol. 18, pp. 392–96.
[22] *Collected Works*, Vol. I.–1, pp. 33, 34.

asserting relations between other propositions such as consistence, derivation, equivalence, probability, *etc.* These sections stand, of course, in close connection with corresponding sections of Part II. In dealing with inferences of probability (§ 253) Bolzano describes incomplete induction (p. 511) as distinguished from the complete (§ 236); the inference by analogy Bolzano regards as a particular case of incomplete induction (p. 512). Correspondingly, Bolzano indicates an extensive modification of logical processes on the basis of probability, such as improper and proper derivation, *etc.* This interesting section, diverging from Russell's views of induction, strongly supports Poincaré's remarks[23] on the latter subject. A remarkable feature of Parts III. and IV. is the use which Bolzano makes of his assumptions, "there exists a representation of widest domain" and "the number of simple concepts is finite." These assumptions occur in sections 221, 225, 226, 229, 233, 234, 236 (*cf.* pp. 150, 167 of Vol. II. and §§ 78, 99 of Vol. I.).

Volume II. of the *Wissenschaftslehre,* like Volume I., is most fascinating. Bolzano, indisputably, has made mistakes[24] in these volumes, but they are errors which, on the whole, might easily have been avoided by investigators of less aggressive originality. Both volumes offer excellent material for research.

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The Next Step in Democracy. R. W. SELLARS. New York: The Macmillan Company. 1916. Pp. 275.

Toward the great religious and social movements which have enlisted the hearts and minds of masses of men there have been two contrasting attitudes on the part of the educated and critical-minded minority. Some have been more impressed by the irrationality, the narrow dogmatism, the dangerous aspects which every such movement exhibits, and have opposed, scoffed, or ignored. Others have felt the appeal, seen the vision that it enshrined, and have sought, while identifying themselves with the movement and calling attention to its kernel of vital truth, to prune away its errors, purge it of its menace, and transform it into a force that should be wholly beneficial. This revisory and interpretative work subjects its exponents to denunciation from two sides—from the orthodox within the fold and from the skeptics without. They are called straddlers, hypocrites, heretics, traitors. But if they do succeed in leavening the movement with their saner view of its proper ends or means, in preserving its momentum and utilizing its power while making compar-

[23] *Science et Methode,* pp. 158–60, and Bolzano, W., II., p. 513, note.

[24] *Cf.* Bergmann, *loc. cit.,* pp. 66, 68, 79, 81, 89, 90, 94.

atively harmless its potentialities for mischief, they render invaluable service. We are all aware of the working of this leaven of liberalism in Christianity; most of us are less familiar with the contemporary attempt of a few large-minded and academically trained thinkers to support, and in supporting to liberalize, socialism. It is in this endeavor that Professor Sellars's book was written.

Socialism, like Christianity, is a movement pregnant with enormous potentialities. Coupled with Christianity—a real Christianity, the Way of life that Jesus taught, at present not comprehended and certainly not practised by one in a hundred nominal "Christians"—it could transform the world. Although as yet, like Christianity in its early stage, spreading mostly among the lower classes—that is, where the need of it is most keenly felt,—it already commands the allegiance of ten or twenty million human beings. But, again like Christianity, its outward expressions—the party organization, the creeds, the periodicals, and propaganda—are for the most part in the hands of the narrower-minded, the extremists, the dogmatists, men who can not see the errors in their traditional doctrine and would tie the movement down to a rigid and more or less irrational orthodoxy.

To Professor Sellars, however, the term "socialism" means "little more than a purpose, a principle, and a direction for experiment" (p. 96), the forward movement toward "a juster and humaner world" (p. 4). Concretely, socialism hopes "to reduce the disorder characteristic of the market as at present organized," "to lessen the waste characteristic of present methods," "to eliminate all degrees of competition that are obviously anti-social in their consequences," "to eliminate unmerited poverty," "to tap new energies which are now latent and are not elicited by our social arrangements," "to make labor-saving devices really saving of labor," "to procure a fair degree of leisure for each individual," "to achieve a better distribution of human costs," "to bring in its wake a society, healthier physically and morally, and one ever more capable of developing sane and progressive institutions" (pp. 50 ff.).

Many will ask, Is this socialism?—just as many ask of those who are seeking to interpret their inherited religion in terms consonant with modern knowledge, Is this still Christianity? Certainly there is nothing to shock the conservative in our author's espousal of these obviously needed reforms. He might well be content to call himself a progressive, or a true democrat, or simply a social-minded man. For those to whom the word "socialism" is a red rag, suggesting Marxism, class struggle, and violence, he will seem to be a sheep in wolf's clothing. And, on the other hand, the officials of the socialist party would presumably disavow him as comrade. Yet to the present reviewer it is a happy augury that a university professor of phi-

losophy should explicitly align himself with the great social-democratic movement, and refuse to admit that its present official pronunciamentos and its traditional dogmas are a permanent and inflexible expression thereof. For it is the spirit and purpose, the passion for a liberty and an equality that shall be more than names, the effort to reconstruct our chaotic and makeshift social order into harmony with reason and kindness, that are the soul of socialism. And if the movement is ever to fulfil these hopes it can only be by abandoning its antiquated economic theories, its cocksure dogmatism, its blind class bitterness, and adapting its programme to whatever expert, non-partisan study and cautious experimenting may show to be practicable and for the common good.

It is gratifying, then, to hear socialists warned, by one who openly espouses their cause, of "the necessarily temporary character of various doctrines associated with it," warned that "socialism must grow just as society itself grows if it ever hopes to be put into practise" (p. 23), and that "socialists themselves are often the greatest enemies of socialism" (p. 73). "Wisdom comes with experience and only a small portion of this hard-bought experience can be anticipated. Humanity is never quite certain of what it can do until it actually tries." But "so long as the movement is supple, malleable and experimental it will win out" (p. 95). "Like all things which are big and vital, it is full of possibilities, and has not come to complete self-expression. It is a movement rather than a position, as much a means of discovery and of social growth as a programme" (pp. 3–4).

In keeping with this emphasis upon the necessary plasticity and experimental nature of the movement, Professor Sellars does not attempt to describe in detail the means by which the reform of the social order is to be accomplished. He does indeed discuss in a series of chapters the application of the socialistic spirit to the problems of liberty, equality, justice, to various political and industrial problems; he even adds some reflections on the present war. But there is little here that is new or better expressed than elsewhere. And this is true of the chapters that defend socialism from its critics. In short, the book is an essay in ethics rather than in economics, politics, or sociology. The title of the book is misleading; it is a vision of the goal and an exhortation to effort rather than a sharp delineation of the "next step." For "what is needed most of all in the United States is an aroused public opinion" (p. 70). "Before America will turn to socialism it must be converted . . . it must thirst for real liberty, rational equality, justice and a noble life" (p. 21).

There is too little concrete illustration, however, and the book lacks picturesqueness or charm of phrase. It remains rather heavily

abstract, and is hardly as winning as, for example, Wells's *New Worlds for Old,* which is so closely akin in spirit. But the fairness, the temperateness and openmindedness of the author, and his clearness of vision, call for unstinted praise. And after all, what is best about the book is just its urging—and offering an example of—an alliance between university scholarship and the great, groping, half-blind, but passionate surge of the proletariat—a movement sinister with danger if left to the guidance of untrained and embittered class-leaders, but full of splendid promise if men trained to exact thinking will enter its ranks, free it from its adventitious, inadequate dogmas, and keep it true to its own deepest intent.

DURANT DRAKE.

VASSAR COLLEGE.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. January, 1917. *Prefatory Note* (pp. 1–3): J. E. C. – As it enters upon its second quarter-century the *Review* announces its intention to continue the same policy adhered to from the beginning. The articles in this issue contain a survey of the main philosophical developments during the last quarter-century. *Realism and Metaphysic* (pp. 4–15): BERNARD BOSANQUET. – An interpretation of the philosophical situation prior to the year 1892. The successive phases of the nineteenth-century philosophy were: In Germany, metaphysic, epistemology, and metaphysic again, supplemented by realism; in English-speaking countries, empiricism, metaphysic, and metaphysic plus realism. The author digresses to state his conviction that the mystical element must be considered in any attempt to construe the world. *Philosophical and Scientific Specialism* (pp. 16–27): GEORGE H. SABINE. – Specialization is a necessary condition of empirical investigation. Psychology and philosophy separated with unwholesome results for both. Such an isolation of science from science and science from philosophy is unsatisfactory, and as a result an interaction of sciences has come about. *Ethics in the Last Twenty-five Years* (pp. 28–45): JAMES H. TUFTS. – Two working conceptions of the history of morality have emerged. These are, first, group life; and, second, the moral as an intimate, inseparable part of the whole process of living. These developments are the result of the scientific conception of evolution. Ethical thought has been most affected, however, by the changes in economic, political, and family life. *Some Thoughts on the Last Quarter-Century in Psychology* (pp. 46–55): MARGARET FLOY WASHBURN. – In addition to widening its field of observation, psychology has greatly improved its methods of investigation, chief among which

is the formula for calculating correlation. Comparative psychology has achieved the best results in the development of method. A strong defense is made in behalf of introspection as a method in general psychology. *The New Developments in Psychology in the Past Quarter-Century* (pp. 56–69): W. B. PILLSBURY.—A statement of the development during the last quarter-century in educational psychology, psychiatry, and animal psychology. Concludes that advance has not been toward unity or a common view-point, but toward separate problems and explanations. *Reviews of Books. Notices of New Books. Summaries of Articles. Notes.*

Armstrong, Alta Florence. The Play of Life. Boston: The Gorham Press. 1917. Pp. 81. $1.00.

Carroll, Robert S. The Mastery of Nervousness. New York: The Macmillan Company. 1917. Pp. 346. $2.00.

Croce, Benedetto. Teoria e Storia della Storiografia. Bari, Italy: Gius. Laterza & Figli. 1917. Pp. vi + 293. 6.50 L.

Diderot's *Early Philosophical Works,* translated and edited by Margaret Jourdain. Chicago and London: Open Court Publishing Company. 1916. Pp. 246.

Hindu Mind Training. By an Anglo-Saxon Mother. London and New York: Longmans, Green, and Company. 1917. Pp. xxiv + 536. $3.50.

NOTES AND NEWS

AT a recent meeting of the Council of the American Psychological Association it was voted to authorize the organization of a committee of psychologists to cooperate with the National Research Council in connection with the war. Special investigations of problems connected with military affairs, such as the examination of recruits, re-education, shock, *etc.*, will be undertaken and the resources of psychological laboratories will be placed at the disposal of the nation.

DR. H. R. CROSLAND, of the department of psychology at the University of Minnesota, has been elected assistant professor of psychology in the University of Arkansas.

AT the University of Texas Professor C. S. Yoakum has been promoted to an associate professorship of psychology and Dr. A. P. Brogan to an adjunct professorship of philosophy.

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PSYCHOLOGY AND SCIENTIFIC METHODS

CONSTRUCTIVE INTELLIGENCE[1]

IF a reader of the volume of essays sent forth by Professor Dewey and some of his fellow "instrumentalists" pauses with curiosity at the title, he may hit, among various explanations, upon this one. When the collaboration was first undertaken and an appropriate label desired, Bergson's *Creative Evolution* was still at the focus of attention. Now, what instrumentalism most insists upon is the constructive and creative function of intelligence. The natural field of thought is the field of natural intelligence. To relegate responsibility for reconstruction to a world process, call it "evolution" or anything else, is not so unlike turning one's affairs over to the Absolute. In either case, when things go into the hands of a receiver there is a bankruptcy, but the bankruptcy is quite gratuitous and metaphysical, so much so that for a very long time it has been a favorite enterprise of metaphysics to imagine some sort of receiver so that natural intelligence might be discredited. But since 1900 the philosophical current has been setting strongly away from its old theological channel.[2] It does not seem likely that the metaphysics of supernaturalism will be stated again so impressively as in *The World and the Individual*, and it is hard to believe that naturalism and empiricism can in the future be viewed with so much dialectical suspicion as greeted Dewey's *Studies in Logical Theory*. For with the beginning of the century, something happened in American philosophy; something came to an end, not all at once, of course, and something began, not, of course, without having been anticipated. It may well be that the importance of *Creative Intelligence* lies not alone in what its authors have to say, but also in its indication of the philosophical position toward which we have been moving. For if the tendency has been not merely from one absolutism to another,

[1] *Creative Intelligence.* John Dewey, A. W. Moore, H. C. Brown, H. G. Mead, B. H. Bode, H. W. Stuart, James H. Tufts, H. M. Kallen. New York, Henry Holt & Co., 1917. Pp. iv + 467.

[2] See the admirable paper by Professor Cohen on "The Conception of Philosophy in Recent Discussion," read at the New Haven meeting of the Philosophical Association in 1909, and printed in this Journal, Vol. VII., p. 401.

but away from all absolutism, it seems not unlikely that instrumentalism, whether the name shall survive or not, is to be an aspect of really empirical naturalism.

It would be interesting to illustrate the progress in philosophy since 1900 by quotations that show the old spirit with contrasting quotations, showing a new loyalty, new, at least, in philosophy; the longing for the eternal peace of a solved equation as contrasted with an interest in what used to be dismissed as "appearance." This latter realm can, we used to be assured, provide us with no absolute certainties, it remains forever "The World of Doubt." In the words of our great idealist: "For us, we turn, not with despair, but with hope, elsewhere. We go to seek the Eternal, not in experience, but in the thought that thinks experience. Our hope is not less because we have found in the temporal a world of doubt. Our song is simply the 'Good-by, proud world, I'm going home' of the religious minded of all ages."[3] How has it come about, Plotinus asks (Ennead V., Bk. I.), that the souls, whose nature is ideal, have forgotten their divine origin, and what must be done to make them remember it? They are like children that have been separated from their father at a tender age, and, having lived a long time apart from him, know neither their father nor themselves. Two things must be done; the soul must be shown the worthlessness of its mundane interests, and it must learn of its origin and of its worth. Thus will it be led back to the source of its being in the First, the One, and the Supreme. And this eloquent passage: "'Hast thou been so long time with me, and yet hast thou not known me?' Such is the eternal answer of the Logos to every doubting question. Seek him not as an outer hypothesis to explain experience. Seek him not anywhere yonder in the clouds. He is no 'thing in itself.' But for all that, experience contains him. He is the reality, the soul of it."[4] And this: "Only the Infinite Self, the problem-solver, the complete thinker, the one who knows what we mean even when we are most confused and ignorant, the one who includes us, who has the world present to himself in unity, before whom all past and future truth, all distant and dark truth is clear in one eternal moment, to whom far and forgot is near, who thinks the whole of nature, and in whom are all things, the Logos, the world-possessor,—only his existence, I say, is perfectly sure."[5] Professor Mead, writing of Harvard in those happy days, observes "There should be a special edition of *The Spirit of Modern Philosophy,* bound in tooled morocco with illuminated borders and initialed paragraphs and illustrated with

[3] Josiah Royce, *The Religious Aspect of Philosophy,* p. 289.
[4] *The Spirit of Modern Philosophy,* p. 350.
[5] *Loc. cit.,* p. 374.

the Pre-Raphaelite art—to symbolize what it meant to young men when Royce first taught in Cambridge.''[6]

The satisfaction this type of metaphysics used to provide is every year harder to understand, but the logical implications are correspondingly clearer. It is really Neo-Platonism risen again in the nineteenth century, somewhat less negative and other worldly in its manner and its apparatus than the doctrine of Plotinus, but no less negative and other worldly in its results, if these are adhered to. And it is historically accurate to connect this doctrine of Royce with the ethics of Fichte. Human difficulties are, as Fichte taught, opportunities for achievement and character. But when we take this transcendentally and theologically, and say that all the tragedy of the world is the Absolute's moral opportunity, the very stuff of His achievement, the necessity for His triumphant life, how shall one be spurred to attenuate His opportunity and His triumph? And if our empirical rectitude makes not that difference, it is hard to see how it makes any. When the only reason for philosophical thinking is curiosity as to how the absolute mind happens to work, philosophy has become the most irrelevant and academic of disciplines, whereas it ought to be the most important and most illuminating one, providing us not with something that experience refutes, but with a power to which experience testifies, and which experience should enhance. We have, I believe, escaped effectually from the metaphysics of supernaturalism in its explicit forms. But philosophy is still extremely conservative not merely because of theological affinities in the past, but because it is to-day, at least, something taught in institutions of learning.

I wish that Professor Dewey had analyzed this circumstance at greater length. What he says on page 4 is full of suggestion, but he could easily, I think, have shown, in this connection, one of the reasons why instrumentalism has met with so much resistance. A teacher is bound to teach chiefly what has been discovered. He uses, necessarily, a method of exposition and demonstration that can hardly be a method of inquiry. A student almost inevitably gets the impression that thinking is following somebody's exposition, and the aim of the professor is, of course, to make his exposition such that it must needs be accepted. In this respect, to be sure, philosophy does not differ from other studies pursued at a university, but one of the most fundamental theses of instrumentalism is that thinking is inquiry, a very different thing from the exposition of what inquiry has arrived at. Mathematics has been, for a long time, the philosopher's ideal of method, but has it been the method of the investigator or of

[6] *International Journal of Ethics*, January, 1917, p. 168.

the teacher? The chances are that our philosophers who know something of mathematics learned it from the expositions of teachers and of books, and that in idealizing mathematics they have idealized not so much a method of thinking as a method of teaching. To quote from Professor Mead's essay on scientific method, "the theory of the growth of mathematics is a disputed territory, but whether mathematical discovery and invention take place by steps which can be identified with those which mark the advance of the experimental sciences or not, the individual processes in which the discoveries and inventions have arisen are almost uniformly lost to view in the demonstration which prevents the results" (pp. 179–180). Professor Dewey observes, "If changing conduct and expanding knowledge ever required a willingness to surrender not merely old solutions, but old problems it is now" (pp. 4–5). The recovery of philosophy that he urges is, accordingly, rather the recovery of philosophy from antiquated and merely professional problems than from any particular solutions of them. To see that they are antiquated and merely professional is to solve them in the one legitimate way.

Professor Dewey criticizes current philosophizing by contrasting the traditional notion of experience with a more observing and empirical account. The contrast is that between the orthodox empiricism of Hume and the radical empiricism of James, and the point at issue is "the place of thought, or intelligence, in experience. Does reason have a distinctive office? Is there a characteristic order of relations contributed by it" (p. 20)? The answer to the first question is, "Yes, the office of control," and to the second, "Yes, logical relations." Intelligence has to do with interests and alternatives and it is in contexts of such normal issues that one thing "means" another thing. "Anticipation is, therefore, more primary than recollection. . . . Success and failure are the primary categories of life" (p. 13). "Our life has no background of sanctified categories upon which we may fall back; we rely upon precedent as authority only to our own undoing" (p. 68). Such subservience to tradition "is the essence of a priorism."

This essay on "The Need for a Recovery of Philosophy" is, I think, one of the very best its writer has given us. I have, of course, done no more than try to indicate its spirit and point of view.

If thinking is a natural power without which a creature drifts pathetically as soon as its environment becomes so complicated and irregular that instinct and habit do not suffice, thinking is, of course, continuous with every case of doing that can be said to be mentally controlled, and the isolation of thinking from the activities that provide its occasions will lead naturally enough to distorted accounts of

it. Instinct and habit are of no avail in the presence of really new situations. The application of fixed rules to particular instances is a good definition of consistent conduct, but, unless the rule is applied in the spirit of experiment, there is no such thing as inquiry. As all readers of Dewey know, it is, then, novelty to which the intelligent response is inquiry or thinking, provided we wish to distinguish thinking from other forms of activity. Traditional logic is, however, the analysis of the technique of applying fixed rules to particular instances, *i. e.*, it is an analysis rather of practical conduct than of thinking. And in the tradition of idealism, logic has been so compromised that Professor A. W. Moore (who follows Professor Dewey in the volume) calls it "a hybrid science, half logic, half metaphysics and epistemology" (p. 71). An important chapter in a recovery of philosophy is, accordingly, bound to be the "Reform of Logic," and to that Professor Moore devotes his attention. His demand is the typical demand of instrumentalism in this matter, *viz.*, that logic be transformed into an effective organon of the mind by ceasing to misrepresent what the mind and its organon have to do. Logic, as expounded in recent years, has been characterized by epistemological transcendentalism of an idealistic or a realistic sort. Both types, the logic of the idealists and the logic of the realists, make knowing discontinuous with the rest of life, and isolate the mind in a sort of vacuum. The reformation required will begin with the restoration of the mind to its field of natural responsibilities, and with ending the obligation of theories about it to obscurantist tradition. The alternative is experiment (inquiry) or dogmatism. "That universals should or could be conceived as experimental, as hypotheses, was, when translated into later theology, the sin against the Holy Ghost" (p. 74). Bosanquet calls procedure by hypothesis by induction "a transient and external characteristic of inference" (p. 94). But beside the spirit of experiment, there must be regained the courage to admit that some genuine facts are empirically mental facts, and that the mind is a perfectly normal thing. It may be, as is affirmed in the *New Realism* (quoted on p. 102), that "Logic and mathematics are sciences which can be pursued quite independently of the study of knowing." The instrumentalist declines, however, to use the word logic in a sense (to be sure, the traditional sense) that would permit this to be true. Such a logic can not be, he holds, an organon of intelligence.

Professor Brown's contribution on "Intelligence and Mathematics" is most welcome. It is to be hoped that he will continue and enlarge the study here so interestingly begun. Professor Dewey remarks (p. 24, note) that "mathematical science in its formal aspects, or as a branch of formal logic, has been the empirical stronghold of

rationalism." Professor Brown shows the natural and instrumental basis of deductive functions. He sketches rapidly the history of mathematics to show that its roots are and always have been "in the workaday world." Counting is the most primitive mathematical activity and is certainly a practical one. It led to the generalizations contained in number symbols and in operations upon them. "The situation seems to be that we are now face to face with new generalizations. Just as number symbols arose to denote operations gone through in counting things when attention is diverted from the particular characteristics of the things counted, and remained a symbol for those operations with things, so now we are becoming self-conscious of the character of the operations we have been performing and are developing new symbols to express possible operations with operations" (p. 143). Mathematics is a technique of operations in which abstraction from the characteristics of individual things has been carried very far. The philosophy of it has suffered like the philosophy of other affairs from the operation of metaphysical motives and assumptions that are no longer justified. Absolutistic mathematics have too long provided a nest for the survival of the faculty tradition in psychology. So if we are asked "why it is that mathematics, 'a purely conceptual science,' can tell us anything about the character of a world which is, apparently, at least, free from the idiosyncrasies of individual mind" (p. 121), the answer is that "the most fantastic forms of mathematics, which themselves seem to bear no relation to actual phenomena" nevertheless derive their relations "from dealing with an actual world" and these relations "may contribute to the solutions of problems in other forms of calculus, or even to the creations of new forms of mathematics" (p. 146). The history of mathematics carries us from the simplest of empirical beginnings to the highest abstractions of science. But mathematical science differs from other science only in disregarding more completely the distinguishing features of individuals and concentrating attention on what is most nearly universal. There is an apt quotation (p. 122) from Boas:[7] "It must be borne in mind that counting does not become necessary until objects are considered in such generalized form that their individualities are entirely lost sight of. For this reason it is possible that even a person who owns a herd of domesticated animals may know them by name and by their characteristics without ever desiring to count them."

Professor Mead's paper, "Scientific Method and Individual Thinker," is an extremely solid and rather difficult article. Scientific method, when it deserves the name, is a method of discovery,

[7] *The Mind of Primitive Man*, pp. 152–153.

not of exposition; it is a way rather of changing a point of view than of conserving it. Such progress begins with novel observations made by an individual, observations that from the established point of view must have been deemed impossible. Scientific method "is a method not of knowing the unchangeable, but of determining the form of the world within which we live as it changes from moment to moment" (p. 225). When the empirical conditions under which we have to act change in important respects, science has to reformulate the world where those conditions prevail "so that we may logically construct our next plan of action. The plan of action should be made self-consistent and universal in its form . . . because our plan of action needs to be intelligent and generally applicable" (p. 226). "In Aristotle's methodology there is no procedure by which the mind can deliberately question the experience of the community and by a controlled method reconstruct its received world" (pp. 191–192). "In the ancient world the atypical individual, the revolutionist, the non-conformist was a self-seeking adventurer or an anarchist, not an innovator or reformer, and subjectivism in ancient philosophy remained a skeptical attitude which could destroy, but not build up" (p. 189). Yet progress, in so far as it is an achievement and not an accident, depends upon creative originality, and originality comes with the dissenting individual, whose heresy is, however, the expression of a positive and constructive attitude; and "this relation between the experience of the individual and the world which may arise through the realization of his ideas, is the basis of the most profound distinction between the ancient world and the modern" (p. 193)

And here, let me state the instrumentalists' position in my own way. Things are judged to be what they are treated as being. Things have to be treated somehow; to treat anything in a particular way is to assign to it certain characteristics. If the word "reality," let us say, means anything, it should mean a particular way of treating the things that are judged to be "real." This is, after all, very much like the principle of Peirce, but the above way of phrasing that principle helps to explain a statement like the following: "The individual in his experiences is continually creating a world which becomes real through his discovery [is thereafter treated as real]. In so far as new conduct arises under the traditions made possible by his experience and his hypothesis, the world, which may be made the test of reality, has been modified and enlarged" (p. 225).

Professor Bode in "Consciousness and Psychology" describes consciousness from the behavioristic and teleological point of view. The "solid achievements" of psychology "lie in the domain, not of consciousness, but of instinctive, habitual, and intelligent adaptation" (p. 231). Consciousness is an aspect of behavior; conscious

behavior is selective and teleological. "Future results or consequences must be converted into present stimuli; and the accomplishment of this conversion is the miracle of consciousness. To be conscious is to have a future possible result of present behavior embodied as a present existence functioning as a stimulus to further behavior" (p. 240). "This control by a future that is made present is what constitutes consciousness" (p. 242).

Introspective psychology, however, takes as its point of departure, "the distinction between focal and marginal experience" (p. 258), but it treats this real distinction, not as a distinction of function (which it is), but as a distinction of "static existence" (p. 268). Bode gives his own account of the focal marginal contrast on page 267, and I regret not to be able to quote it all. "The marginal character of an experience is simply a reference to its function as a clue or cue to some further experience, *i. e.*, a reference to its character as a changing stimulus. . . . The transfer of the future into the present gives us a fact, here and now, and in this respect the experience is entirely focal in character, and as such it is subject-matter for the various sciences. . . . With respect to the further experience, however, which it conditions or for which it prepares the way, the present experience is entirely marginal, *i. e.*, in its character as a changing stimulus it is subject-matter for psychology. The distinction of focus and margin, then, is based ultimately upon the function of experience in the control of behavior." And on page 275 "Focus and margin, in short, have to do with movement, with transition, and not with a static field."

Conservative psychologists will, no doubt, protest that consciousness is not at all the sort of thing the behaviorist talks about. Some of their objections are, however, more than likely to be dialectical ones, controlled by the word and its associations. And might it not be shown that a large part of the technique of "experimental" psychology has been determined by the traditional introspective point of view, so that by adapting their methods to their conception, they have controlled their conception by their method: are they not, in fact, judging a conception of consciousness to be valid by treating it as such in their technical procedure? When experimental reactions in a laboratory are disconnected from all issues and consequences with which intelligence could be concerned, the responses are prevented from showing just what is characteristic and important about "conscious" responses. The biological individual can be isolated in a laboratory for observation, but the normal "conscious," *i. e.*, the *civilized* individual, the social and moral person can not be observed in this way. It is a pity that this volume of essays does not include a study developing the behavioristic concept of consciousness in the

field of social psychology. That is, perhaps, the inquiry which might give a tentative completeness to the instrumentalist position, and it should throw light on some of the problems with which Mead is concerned, and which must be attacked, he believes, "from the social nature of so-called consciousness" (p. 220).

Professor Stuart's study entitled "The Phases of Economic Interest" emphasizes the importance of novelty in human affairs from another angle. Science naturally tends to standardize its subject-matter, to treat it as recurring phenomena, to stamp it with routine. But when the subject-matter is provided with a capacity for escaping routine, when the complex variety of his existence obliges him to be inventive and resourceful, this "scientific" point of view misrepresents its material. Men and women do not behave with the fixed routine of merely physical facts. And the practise of inventive resourcefulness modifies the one that practices it. "Can the conception thus suggested of personal growth through exercise of creative or constructive intelligence be in any measure verified by a general survey of the economic side of life? Has it any important bearings upon any parts of economic theory" (p. 283)? These are the questions that Professor Stuart considers. According to the current dialectic, commodities are produced because demanded. How can a *new* commodity, of which there is neither experience nor knowledge, be demanded, so how can economic theory account for its being produced? *Logically,* it can not, but that should not blind the economist to the fact that one gift of man is curiosity, and a real pleasure in novelty, and this interest is found in "economic" experience as well as in other experience. But an important school of economists, Böhm-Bawerk and the Austrian school, has been misled on this point; economic problems do not occur in human experience with the isolation and definition that theory has conferred upon them. "Real economic progress is ethical in aim and outcome" (p. 352). "The economic interest as a function of intelligence finds its proper expression in a valuation set upon one thing in terms of another" (p. 351). Economics "reminds us that morality and culture, if they are genuine, must know not only what they intend, but what they cost" (p. 352). Thus ethics and economics can not be divorced.

If economics has suffered from dialectical simplification, ethics has suffered no less. "Those writers who have based their ethics upon concepts have frequently expressed the conviction that the security of morality depends upon the question whether good and right are absolute and eternal essences independent of human opinion and volition. A different source of standards which to some offers more promise for the future is the fact of the moral life as a constant process of forming and reshaping ideals and of bringing these to bear

upon conditions of existence" (p. 357). Thus Professor Tufts introduces his point of view in "The Moral Life and the Construction of Values and Standards." If any line of study has something to do, that study should be ethics, and the state of the world to-day shows that ethics can not be divorced from economics and politics. All the factors of social contradictions must be taken into account, and new definitions must be looked for (p. 407). "Can any one by pure reason discover a single forward step in the treatment of the social situation or a single new value in the moral ideal" (p. 408)? Tufts analyzes his point of view (pp. 372–373) as covered by the five following claims: (1) "The good while objective is yet objective as a value and not as an essence or physical fact," by which, if I understand, is meant that the good is a state of things to be brought about, but is not anything already in existence, or explicable, much less attainable in merely dialectical terms; and it is to be brought about as a favorable variation of conditions that exist, but are condemned as unsatisfactory. (2) That a social factor in value throws light upon the relation between moral and other values, by which is meant that things that have value to the individual as such and acquire thereby an economic status, take on moral significance when they influence the relations between two individuals or more. Anything, an object of competition, for instance, that affects a social variation or a variation in cooperative relations, is a factor in a moral situation. (3) "That right is not merely a means to the good, but has an independent place in the moral consciousness." Moore, for instance, is wrong in saying that "right does and can mean nothing but 'cause of a good result,' and is thus identical with the useful"; the quality of the present is involved as well as future references, and this is a function of social education; no amount of subsequent benefit accruing from the condemnation of Socrates could make that action altogther "right." (4) "That right while signifying order does not necessarily involve a timeless eternal order, since it refers to an order of personal relations," relations, *i. e.*, of reciprocal good faith and loyal cooperation. (5) "That the conception of right instead of being a matter for pure reason or even the 'cognitive faculty' shows an intimate blending of the emotional and intellectual and that this appears particularly in the conception of the reasonable"; proposition 5 is explained by a quotation from Dewey—"The only truly general, the reasonable as distinct from the merely shrewd or clever thought, is the generous thought."

Professor Kallen invites us to consider that curiosity of pious metaphysics, the "problem of evil." When evil is so frequent and so sinister what can induce a candid philosopher to deny its reality? Surely it takes a fanatical optimist to believe that all is as it should

be in spite of appearances—that "reality," in spite of all the evidence we have, is pure and perfect. The compensatory function of illusion is something we all know, but why should the imagination, familiar with life and death, with contradiction, mutability, and constraint, have found such satisfaction in demonstrating our own freedom and immortality, and the unity, spirituality, and eternity of this baffling world? Philosophers have labored at "proofs," but have turned their backs on evidence. The "proofs" make plausible what is desired, while evidence could but testify to what happens to be. In the "history of philosophy" the "task of philosophy" as often and unctuously explained is to substitute value, the desired, for existence, the given, and to make the substitution articulate and plausible. This is the antithesis in the title of Kallen's paper, "Value and Existence."

But the cultivation of illusion, although the way of much philosophy, is not the way of intelligence. Art is wiser. "Art does not substitute values for existence by changing their rôles, and calling one appearance and the other reality: art converts values into existences; it realizes values, injecting them into nature as far as may be" (p. 437). Art awakens, enlarges, informs, perhaps, but has no desire to deceive. "Philosophy realizes fundamental values transcendentally beyond experience: art realizes them within experience" (p. 437). But the values postulated by philosophy have to be conserved with the aid of much social and ceremonial furniture, forms that simple folk can use. This is what religion does. But religion faces the world more candidly than philosophy; less obsessed with "unity" it finds part of its capital in the fact "that the actual world, whatever its history, is now not adapted to human nature" (p. 441). The bearing of these considerations is upon the conception that a philosopher of to-day should have of his own undertaking, a philosopher, that is, who has freed himself from the incubus of his academic tradition. Philosophy should be a power as art is, a power to fabricate comprehensive policies where wisdom, purpose, and skill can cooperate.

II

The above is, indeed, a ponderous and literal-minded summary of what the reader finds in *Creative Intelligence.* Far more profitable, however, than a discussion of these papers in detail is a consideration of the philosophical movement here represented, separating, so far as we may, its constructive from its merely polemical aspects.

This separation is not an easy one to make. Instrumentalism is part of the whole shifting to empiricism, part of the steady, but more

or less perplexed renunciation of idealism. If we take as the first explicit document of instrumentalism Dewey's *Studies in Logical Theory,* we see that it began when idealism was in all but complete possession of the field. In this determination to be free from supernaturalism, instrumentalism is at one with neo-realism. The neo-realists are, I take it, even more involved in the controversy with idealists. If we take together the later work of James, of Santayana, of the Chicago pragmatists, of the neo-realists, the more recent developments in psychology and in ethics, the attempt of philosophers and lawyers to get together, we see a movement all in one direction, and whatever that movement is toward, it is perfectly clear what it is away from.

In the above enumeration, I spoke of the later work of James. James was, however, always a prophet of instrumentalism. His *Psychology* contains various explicit statements of this point of view, statements that probably used to be something of a scandal to his readers. His conception of mind has been excellently phrased by Perry in his sketch of James's philosophy.[8] "His object is man the organism, saving himself and asserting his interests within the natural environment. . . . The mind is not a mirror which passively reflects what it chances to come upon. It initiates and tries. . . . The mind like an antenna feels the way for the organism. It gropes about, advances and recoils, making many random efforts and many failures; but it is always urged into taking the initiative by the pressure of interest, and doomed to success or failure in some hour of trial when it meets and engages the environment."

Now if this is a good metaphor, if it does indicate the kind of thing the mind has to do, what are the consequences for philosophy likely to be? How is our theory of the intellect and its methods and resources likely to be modified? The pragmatism of James was, to be sure, quite a different thing from the instrumentalism of Dewey and his followers. James was too much interested in the uniqueness of personality; he was too much the artist, too much the sympathetic friend of eccentric individuals to take readily to the impersonal point of view of science. His esteem of individuality made him impatient of the social emphasis, and of the historical type of explanation so characteristic of the instrumentalist point of view, and to which his concept of "radical empiricism" naturally extends itself. But although James was so generous and so human, he was never the servant of tradition; he came to philosophy and psychology from medicine, and he liked to think of the psychologist as the physician of the soul, rather than as its metaphysician. I think we are not likely to exaggerate if we recognize and welcome in the

[8] *Present Philosophical Tendencies,* p. 350.

progress of instrumentalism and empiricism much of the spirit and influence of James.

As I have remarked above, instrumentalism is part of the general shift of emphasis and interest, and this is not a purely American matter. It has been going on all over the world wherever philosophy is an organon of mind alive in the world of to-day. It is, however, the good fortune of America to be freer in this matter than are the countries with more impressive philosophical traditions of their own, and it would be a pity if our thinkers here should not respond to their advantage, all the more so as our obligations to European thinkers are so genuine; one need cite only the names of Mach and Poincaré and, I am sure, Bergson. For there is one aspect of the latter's philosophy which instrumentalists must cordially appreciate, his insistence on the reality and importance of time. Dewey has to explain continually that the temporal aspect of experience is the fundamental thing about it. Any philosophy that makes much of empirical reconstruction, of utilizing the past in the interest of the future, is, the facts being what they are, under considerable obligations to the French philosopher. As long as time was "phenomenal" and negligible, as long as philosophers sought the "eternal" nature of "reality" and took no interest in change and novelty, they had to misrepresent the capacity that reveals itself most clearly in ingenuity, the power of constructive and inventive thinking. The recovery of time was a prime necessity, and although this should not have been difficult with a little common sense, Bergson is one of those who has helped us out of the old static world. Timelessness had to be dethroned and relegated to its field of dialectic before philosophy could be normally empirical.

And this brings me to a question, which does not, however, imply disagreement. The ideal of instrumentalism, and of the modern ethics that hails not Kant but Socrates as its prophet, is civilized intelligence. Yet if the past contains no lessons for the future, if the fruits of experience can not be depended upon, if indeed there are no fruits of experience, how can intelligence be possible, how can any instrumental function operate? If experience does not repeat itself, how can there be a logic of any sort, experimental or other? The only writer in *Creative Intelligence* who refers to this circumstance is Stuart (p. 299), who observes: "If, then, 'logic' is unable to express the nature of our forward looking interest in the unexperienced and unpredictable, perhaps the empirical fact will speak for itself."

The empirical fact does speak for itself, and my query is, of course, a dialectical one, intended not to deny the facts to which the instrumentalists appeal, but to comment upon what seems a

rather one-sided (because polemical) statement of their own position. When we face complete and entire novelty we stand helpless; even experiment can not be "intelligently" controlled. But such radical novelty as this seldom or never occurs, and I do not suppose that any instrumentalist postulates it. What we call new is a variation of the old, not an entire removal of it. The automobile was, of course a "novelty," but it was a new kind of vehicle, a new kind of self-propelled vehicle. If the instrumentalist charges his opponents with abstracting from what makes thought necessary, a neutral critic might say that the instrumentalist is inclined to abstract from what makes thought possible.

After all, the trouble is, I think, largely a matter of exclusive emphasis. Traditional "logic" is the application of rules to particular instances, and if that is all we obtain the result is dogmatism and much futility. The reform of logic that Moore calls for does not consist in abandoning the principles of common sense, but in supplementing "logic" with experiment, in applying the principles of "logic" without dogmatism, and in maintaining an attitude of open-minded inquiry, welcoming the individual's fruitful originality (Mead), and not by repudiating him as a non-conformist, applying both experiment and common sense to problems that are urged upon us by life, and not merely transmitted to us by tradition (Dewey).

Instrumentalism is one chapter in the larger volume of empiricism, and no single chapter can possibly contain all the rest of the book. An instrumentalist naturally may seem to "abstract" from much that he takes for granted. Intelligence depends upon recurrence, and thinking presumes partial novelty. Intelligence begins when recurrences can be noted and controlled, when men have some success in dominating their world and themselves. The most thoughtful Greeks launched philosophy as an organon of intelligence rather than of thinking, because their problem was what Dr. Kallen calls the conservation of values. But the time came when the natural world was viewed as something neither to understand nor to use nor to enjoy. Philosophy postulated perfection beyond the moon, and the problem of evil, born of the pessimism of collective failure, has dominated metaphysics even to this generation. But in thus becoming a device of the "twice born," philosophy ceased to be an organon of the mind. The instrumentalists are the "once born" who would make philosophy again an organon not merely of conservation, but of directed growth.

It is this return to the idea of organon which gives us, I think, the best cue to instrumentalism's most characteristic attitudes. Instrumentalism is most reasonably to be understood by giving it its place in the history of the organon, a history that is not quite the

same thing as the history of logic. This history seems to have begun in the political rivalries of Greece. A technique of debate of effective exposition of a programme, and of demolition of a rival programme must have been well developed long before Aristotle gave it its most economical statement. Logic has remained from that day to this the principles of the exposition of the consequences of what can be precisely identified. The question is, as I have tried to point out, whether logic can ever be anything else, and whether the use of such principles is not the essence of intelligence. But be that as it may, philosophy as an organon will have to be applied to different problems at different times, and that is why the organon for to-day has to be formulated in a setting of social psychology and social ethics. At a time when the social fabric is so frail and when social problems are so serious and menacing, when the very idea of democracy seems to be on trial, a philosophical organon must be primarily an instrument for the study of human values in their empirical and precarious interdependence. The document in which instrumentalism appears as a contribution to the history of the organon is, of course, Dewey's *Essays in Experimental Logic.* Professor Dewey would not, I suppose, claim to have formulated a new organon, but all his writings on logic do constitute a body of prolegomena to a new organon.

Discussion such as that in *Creative Intelligence,* and that which I have permitted myself, falls easily into sweeping statements, and indulges in broad and somewhat abstract terms. The word "philosophy" is, however, like the words "science" or "literature," "art" or "industry," a label under which we can group a great many theories, problems, and, perhaps, discoveries. We do not see biologists and chemists discuss particular problems in terms of the nature of "science." Should not the good philosopher be like the good scientist, or the good man of affairs—the man who studies as successfully as he can, one particular problem or another? In fields so rich as philosophy, science, and practical affairs there are many and various things to be done, and what is desirable to get done depends on many and various circumstances. A problem is not any more or less genuine or more or less important because we have labeled it a problem of philosophy or because we have neglected to label it at all. Our human situations present so many faces, the picture of one will not be the picture of another, and should not claim to be. In the welter of experience the problem of controlling and directing it is bound to be a twofold problem because conservation and innovation must both work together. Each will have its special advocates, and each, very likely, its time of special importance. What we have come to call instrumentalism is the voice of those whose philosophy is inspired by a discontent with things as they are and who

believe that it is the special business of the mind to change them. Instrumentalism is the philosophy of constructive radicalism at a time when the world is full of forces and instruments of transmutation. Intelligence has or ought to have a pivotal position in the world, and the enforcement of this position is the constant problem in all the multitude of real and changing problems with which we have to deal. We can not depend upon providence or evolution or the inertia of things. Philosophy will have different tasks at different times, but just now one great task for the *thinker*, for the American thinker, is to "bring to consciousness America's own needs and its own implicit principle of successful action." What can that principle be except the frank responsibility of constructive intelligence?

Instrumentalism, as well as the more comprehensive empirical naturalism, is, to be sure, "a recovery of philosophy," but this recovery has, I venture to believe, been carried farther than we perhaps realize. How quaint and far away, taken with its traditional interpretation, seems the famous sentence of Locke: "Since the mind in all its thoughts and reasonings hath no other immediate object but its own ideas, which it alone does or can contemplate, it is evident that our knowledge is only conversant about them." *Eppure muove.*

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FRANCIS BACON AND THE MODERN SPIRIT

THE philosophy of Francis Bacon is at once a reaction, a reformation, and a prophecy. As a reaction it is set in contrast to much that we have come to call ancient and medieval. As a reformation and a prophecy, it is the embodiment and prevision of what we now term modern. It is with Bacon as the exponent and prophet of the modern spirit that I am specifically concerned. Whether he was a Machiavellian in character, an opportunist in politics, a dilettante in arts and letters or a "buccinator" in the sciences, are matters beyond my immediate interest. Other considerations, too, as to whether he was original, or whether his treatment of mathematics was defective, or whether his inductive method was adequate, or whether his account of "causes" was the continuation of alchemy, are likewise topics which must be passed over. Whether original or not, there is no other man of the times in whom the many-sided and varied interests of the age are so illustrated and reflected. If we can attach any meaning to the word modern and if we can anywhere point to a transition from medieval to modern, that meaning and that transition are exemplified in the writings of Francis Bacon. As the mouthpiece of his age he is the spokesman of modernity.

We are frequently using the word "modern," and that, too, usually in a euphemistic sense. Just what do we mean by the term? Every one is familiar with the stereotyped division of time into ancient, medieval, and modern. On the basis of this division the customary view is that the intellectual history of western Europe, in its first and ancient period, shows great spontaneity, originality, and creative power, that thought develops to a climax that is classical, and then, through a series of rather unfortunate accidents, it takes a slump. From the sixth to the middle of the fifteenth century thought is at a standstill. Then all at once the great enlightenment. Man suddenly, with his intelligence emancipated and with his imagination set free, awakens to the discovery of himself as a human being and of nature as an object of human interest. And ever thereafter times and men are modern.

Now Shakespeare, as we know, in writing historical plays has taken great liberty with events in their temporal sequence. For literary purposes or for esthetic effect, men have a dramatic birth long before their real birth or they have a dramatic death long after their real death. And certain historians, I dare say, have written history much as Shakespeare wrote dramas. That is to say, under the constraint of an esthetic preference for the dramatic and spectacular, historians have greatly overemphasized the importance of the renaissance and have tremendously undervalued the significance of the preceding centuries. As a matter of fact the "dark ages" were not quite so dark as they are usually pictured nor was the "enlightenment" quite so bright as we have been led to suppose.

From many quarters we are being told by contemporary historians that the middle ages are a "myth," and that the renaissance is a "fiction"; both are inventions of the historical imagination. Thus writes Professor Shotwell: "The trend of recent historical development leads one even to doubt the validity of the very conception of any definite medieval period."[1] We must, then, it seems, give up the notion of trying to define modern on the basis of a temporal distinction. And so from now on we shall speak, not of modern *times*, but of the modern *spirit*. So far as temporal distinctions are concerned, says Francis Bacon, "we are the ancients." He writes: "And to speak the truth antiquity, as we call it, is the young state of the world; for those times are ancient when the world is ancient; and not those we vulgarly account ancient by computing backwards; so that the present time is the real antiquity."[2] Or as elsewhere stated: "Truth is not to be sought in the good fortune of any particular conjuncture of time, which is uncertain, but in the light of

[1] Article, "The Middle Ages," *Ency. Brit.*, 11th ed.

[2] *Advancement of Learning*, p. 50. Bohn's Library ed.

nature and experience, which is eternal."[3] And so I say we had best not speak of modern times, but of the modern spirit. Wherever that spirit has been active and operative, those times were modern times.

What, then, is the modern spirit? There are, it seems to me, four cognate ideas which go to make up the concept of modern. I do not present them either as final or as complete. I present them as tentative and partial. They are the ideas of progress, of control, of utility, and of responsibility. And these are just the ideas we find so conspicuously emphasized in the writings of Bacon.

I

And first as to the idea of progress. It is with the "advancement" of learning that Bacon is chiefly concerned. Intellectual history had come to a standstill. Philosophy was coming down in the form of "master and scholar," but not in the form of "inventor and improver." Bacon points to the mechanical arts which daily are showing advance and improvement, while the intellectual sciences are "like statues, celebrated and adorned, but never advanced."

I shall describe somewhat in detail the intellectual situation at the beginning and at the end of the middle ages, for only in this way can we understand the significance of Bacon's reaction. It has already been indicated that we must give up the evolutionary method of historical interpretation, the view that thought develops to a climax during the ancient period, then falls during the middle ages to rise again in modern times. History represents a series of reactions to concrete situations. On the one side, in the form of stimulus, we have the "classical heritage" and the theology of the Church Fathers. On the other side, as agents, we have the younger races of the north, different from the ancients in race, in character, and in training. In a situation like this, what is man's intellectual task? It is not to create nor to invent; it is to learn and to understand. Add to this the further consideration that the past came under the constraint of authority; the antique culture was acquired with a characteristic deference for antiquity, and Christianity was accepted under the notion that it was necessary for salvation. This deference of a younger race for the traditions of an older race was an inevitable part of the situation. It was the controlling factor in setting the intellectual task of the middle ages. Man's task was not to create or to alter, enough for him that he understand and admire. This felt intellectual humility in the presence of a superior past tended toward the subordination of free intellectual inquiry.

Let us shift our point of view to the end of the middle ages.

[3] *Novum Organum*, Bk. I., Aphorism LVI.

After centuries of learning man has accomplished his task. He has learned his lesson. Intellectually he has arrived. He can now "lie back." Surely there has been progress and advance. But how about *further* progress? The situation is such that with the given subject-matter no further progress is possible. With the given material all has been done that can be done. Its subject-matter has been worked through with a thoroughness that has left nothing more to be accomplished. The given stock of premises has been squeezed dry. Unproductiveness has become congenital.

In his reaction to this situation Bacon does not condemn the past. His attitude is not one of fault-finding. His philosophy is not a renovation, but an innovation. When advance is no longer possible in a given direction the obvious thing to do is to change the direction. "Let there be," he says, "one method of cultivating the sciences, and another for discovering them." Cultivation is all right, but it is not discovery, and progress is to be sought in discovery. There is no need to refute the past. The need is to widen man's intellectual outlook, to extend knowledge beyond its already too narrow limits. It is with the extension of knowledge into new fields that Bacon is concerned. Progress does not consist in the inculcation of a doctrine nor in the perpetuation of a tradition. It may be well that doctrines be inculcated and that traditions be perpetuated, but that is not progress; it is cultivation, but not discovery. Advance involves a new point of departure, a new interest, a new subject-matter and a new method. The important thing is that Bacon gives expression to the idea of progress, and therein consists the birth of the modern spirit.

It is important that one believe in the possibility of progress, for the absence of such a belief commits one either to an arrogant dogmatism, a complacent satisfaction with things as they are, or to a hopeless skepticism, the dangerous doubt that things can be improved. On this subject Bacon has written as follows: "But by far the greatest obstacle to the advancement of the sciences, and the undertaking of any new attempt or departure, is to be found in men's despair and in the idea of impossibility."[4]

One may view the world in such a way that progress is by definition ruled out. Such a view, for example, would be that of Plato. A Platonic "Idea" can not be improved. It is once for all what it is, ready-made, fixed and unalterable. Now Plato, as every one knows, exercised directly or indirectly through Neo-Platonic sources a profound influence on the medieval mind. This conception of fixity, of a static world, was riveted on men's minds. From such a point of view it is easy to see that progress is in the very nature of the case ruled out. Novelty and change are out of the question. But not so

[4] *Novum Organum*, Bk. I., Aphorism XCII.

with Bacon. He is possessed with a faith in the possibility of progress. And this possibility is grounded on the conception of change. To accept the past with a dogmatic belief in its fixity and finality is to preclude the possibility of progress.

II

The fact of change is the condition of progress, but is not itself progress. Movement affords the opportunity for advance, but is not itself advance. Nature gives us change, man converts change into progress by giving it direction. Only where change is accumulative, only where evolution is creative, only where the growing edge of reality is endowed with a marginal efficiency can we in any true sense speak of progress. And this leads us to the second idea of modern, the idea of control.

The purpose of the *Novum Organum* is to describe a method by means of which man can control nature. The logical methods of the middle ages were well designed to meet the intellectual task set by the medieval mind, but they were totally inadequate as methods for the interpretation of nature. Since nature is a new subject of inquiry there is need for a new method of interpretation. Such a knowledge of nature as there was had been based on sense perception. The sun was supposed to move around the earth because that was the immediate fact of sense experience. And it is equally true that deduction is just as inadequate. Aristotle had said that the heavenly bodies move in circles because circular movement was the most perfect movement. Such esthetic considerations, Bacon urges, are hopeless when it comes to a true interpretation of the facts and laws of nature. Pure logical deductions can never lead one to a knowledge of matters of existence. And so if one would arrive at a knowledge concerning matters of fact or concerning the forms and connections of nature, one must abandon sense perception and deduction as methods. One must discover a new method, he must resort to an indirect means of attack, he must employ instruments as aids to interpretation. The understanding, writes Bacon, "when left to itself, . . . undirected and unassisted, is unequal to and unfit for the task of vanishing the obscurity of things."[5] Or again, "Effects are produced by the means of instruments and helps, which the understanding requires no less than the hand."[6]

As every one knows, induction was Bacon's instrument of interpretation. I can not here discuss the question as to whether Bacon was the first to use induction, or whether his account of it is adequate, or whether induction without deduction is complete. I can only point

[5] *Novum Organum*, Bk. I., Aphorism XXI.
[6] *Ibid.*, Bk. I., Aphorism II.

out the fact that Bacon signalizes the truth that control lies in method. And method was for Bacon as it was for Descartes essentially a matter of the mind. "Knowledge is power," or what is the same thing, control is primarily an affair of the intelligence. "Before we can enter the remote and hidden parts of nature, it is requisite that a better and more perfect application of the human mind should be introduced." Intelligence is not foreign to nature; mind mingles with matter, directing and controlling it. Mind is method, or what is the same thing, thought is the way forward. On the subject of mind as an instrument of control Professor Woodbridge has written as follows: "The world, although it is moved by its own forces and according to its own laws, is yet controllable just in proportion as it is understood. By itself, it is solid and unyielding; penetrated by the mind, it is fluid and convertible. By itself, it is man's master; through his mind, it is his servant."[7]

III

To get forward, then, through the instrumentality of mind is so far the meaning of modern. But your conservative type of mind will ask, for what purpose? And the only answer which I am capable of giving is, because it is worth while. We are led to places where we have not yet been because they are the kind of places *worth* being led to. Only where change is useful can we say that there has been progress. In short, to get forward is worth while. To progress and control, then, we must add the third factor of modernity, namely, utility.

And again it is Francis Bacon who is our guide. His writings are permeated with the idea of practical utility. In enumerating the errors which have held men back and which have brought learning to a standstill, he says: "But the greatest error of all is mistaking the ultimate end of knowledge; for some men covet knowledge out of a natural curiosity and inquisitive temper; some to entertain the mind with variety and delight; some for ornament and reputation; some for victory and contention; many for lucre and a livelihood; and but few for employing the Divine gift of reason to the uses and benefit of mankind."[8] Elsewhere he says: "The real and legitimate goal of the sciences is the endowment of human life with new inventions and riches."[9] Thus progress operates in the interest of human welfare; it is to alleviate human suffering, to better the conditions of human beings; it is, in plain English, to make the world a more de-

[7] "The Discovery of the Mind," *Columbia University Quarterly*, December, 1912.

[8] *Advancement of Learning*, p. 53. Bohn's Library ed.

[9] *Novum Organum*, Bk. I., Aphorism LXXXI.

cent and respectable place to live in. It is not, in the language of Macaulay, so much to make men perfect, as it is to make imperfect men comfortable.

In this respect Bacon's philosophy is set in sharp contrast to both ancient and modern philosophy. This point is well marked by Lord Macaulay in his essay on Bacon. In support of his view he quotes a passage from Seneca in which it is asserted that philosophy is not concerned with inventions and discoveries. "We shall next be told," says Seneca, "that the first shoemaker was a philosopher." And then Macaulay adds: "For our own part, if we are forced to make our choice between the first shoemaker, and the author of the three books on Anger, we pronounce for the shoemaker. It may be worse to be angry than to be wet. But shoes have kept millions from being wet; and we doubt whether Seneca ever kept any one from being angry." Bacon himself brings against Greek philosophy the following serious charge: "Now from the systems of the Greeks . . . during so long a period, scarcely one single experiment can be culled that has a tendency to elevate or assist mankind."[10] I am sure that to many minds this idea of practical utility will seem gross and commercial; it sounds opportunistic and utilitarian. "Do your duty," says Immanuel Kant, "though the heavens fall." As if, as has often been remarked, it were not one of man's duties to keep the heavens from falling. A professor of philosophy once, when asked what the use of his subject was, replied: "In a materialistic and utilitarian age like this, I thank God that I am teaching a subject that hasn't any use." It is not my purpose to say whether philosophy has fallen into "innocuous desuetude." I can only say that in so far as it disdains to be useful it can not be said to be modern.

IV

Thought is the way forward; and to get forward is worth while. From this it follows that progress is a human achievement. The fourth factor in the meaning of modern is responsibility. Nature through change affords the conditions of progress, man through his mind converts change into progress by giving it direction and by subjecting it to control, and therein consists his responsibility. We are too prone to shift the burden of responsibility. On this subject Bacon has written as follows: Men think "that in the revolutions of ages and of the world there are certain floods and ebbs of the sciences, and that they grow and flourish at one time, and wither and fall off at another, that when they have attained a certain degree and condition they can proceed no further."[11] The idea here is that

[10] *Novum Organum*, Bk. I., Aphorism LXXIII.
[11] *Novum Organum*, Bk. I., Aphorism XCI.

progress is beyond human control. If we get the idea that things are developing in accordance with great natural or spiritual laws, that progress is somehow bound up in the nature of things, that development is an inherent necessity, and that therefore we, whenever we please, can "take a moral holiday," then, I dare say, we have mistaken the function of thought in human experience. To shift the burden of progress on to natural law, or on to sociological gravitation, or to the evolution of some Hegelian world-spirit, and thereby to exempt ourselves from accountability, is to revert from progress to change. Progress is neither a happy cosmic accident nor a divine gift, it is a human achievement. If things are to become better, if society is to improve, if civilization is to advance, it will be because human beings, conscious of the power of intelligence to participate in the production of progress, feel a moral constraint to use their minds in the enlightened pursuit of the good. It is here that "intelligence and morals" unite. There is a "moral responsibility to be intelligent" as well as an "intellectual obligation to be moral." And in that consists, not only the spirit, but also the spirituality of the idea of modern.

To use the mind for the purpose of getting to places hitherto unexplored, places in themselves worth getting to, and the consequent moral constraint so to do—this, or something like this, is Bacon's theoretical programme of reform. And in terms of ideals like these we would characterize the spirit of modernity.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Psychology of the Great War. Gustave LeBon. Translated by E. Andrews. New York: The Macmillan Company. 1916. Pp. 480.

The title of this book does not convey a correct idea of its scope. It might better have been called "Reflections on the Great War." This would have been at the same time a more and a less pretentious title. For while the book does contain a remarkably varied and interesting assortment of ideas suggested to a thoughtful observer by the events of the day, it is not a scientific treatise. It would probably be impossible for any living man to write a scientific psychology of the war, partly because psychology is not at present provided with the necessary principles and methods, and partly because sufficient data are not yet available. M. LeBon does not pretend to confine himself to psychological considerations. He summarizes the economic and political evolution of modern Germany, discusses the economic

and political causes of the war, collects and quotes the more important diplomatic exchanges that immediately preceded the outbreak of the war, describes the novelties of modern warfare, roundly abuses the Germans, and speculates on the strategy of the battle of the Marne. Although he speaks in the name of psychology, what he has to say on these topics does not differ from what any fairly well-informed contemporary might say. Most of it is generally familiar, and it is journalistic in its style and in its sources. Unfortunately it is journalistic even to the extent of omitting all references to the sources which he does use. This must not be taken to imply that the book is not valuable. It would be valuable if it were only as a collection of excerpts from newspapers, interviews, letters, and state papers. But it is more than this; it is an informing and stimulating book. I mean only that it is not what the author seemingly intends it to be, namely, an explanation of the war in terms of psychological laws.

Before turning to the author's psychology, there are several miscellaneous matters that are deserving of special mention. Thus it is interesting to note that he absolves Germany from the charge of having deliberately precipitated the war. He answers "the question of Who wanted the war? by saying, 'No one' "; and finds the immediate cause of the conflict in "the mutual distrust of the three Emperors" (p. 264). Germany, he thinks, expected Russia to back down, and then when she did not do so, was afraid to lose the advantage of prior mobilization. The lessons which France is to learn from the war are two, discipline and realism. She has been weakened by factional dissension and by her illusions concerning the power of words and of moral forces. The author is not hopeful of a lasting peace. "First of all," he says, "we must set aside the childish babblings of the pacifists, who tell us that peace results from the triumph of the right" (p. 461). But it may come, he admits, as a result of "economic and social necessities," which for some reason he regards as something very different from right. He adds new horrors to the rapidly growing exhibit of German moral pathology; but he adds nothing to the explanation of it. The German mind remains for him what it is for most enemy and neutral observers, a strange and unaccountable mixture of opposites, of brutality and docility, unscrupulousness and honesty, efficiency and sentimentality.

Let us turn now to the psychological apparatus with which M. LeBon proposes to explain the phenomena of the war. He recognizes five forces: the biological, the affective, the collective, the mystic, and the intellectual. Each of these has a "logic" of its own and appears to operate independently of the others (pp. 27, 39). The first, which includes "hunger and desire," is barely mentioned.

The second, third, and fourth are magnified, the fifth belittled. In other words the author's thesis is that reason counts for little in human affairs as compared with affective, collective, and mystic forces. But the reader will be disappointed if he looks for any clear formulation of these conceptions. Thus he cites as affective influences Austrian race-hatred of the Serbians, Russia's fear of loss of prestige, French sense of honor, British moral obligation to protect Belgium, and German desire to humiliate Russia. Such motives are supposed to be extra-rational; but what sort of motive would then be rational does not appear. As a matter of fact the author nowhere cites an instance of a rational motive, except to say that "if rational logic had played any part at all in the will of her rulers," it would have caused Germany to avoid war at all costs (p. 172). This is because Germany's interest in world-dominion would have been served better by industry, commerce, and peaceful infiltration. In other words, a rational force is apparently an interested action founded on *correct* reasoning, or on reasoning that agrees with that of M. LeBon. But if so, then this is not a psychological matter at all; for whether a force was rational or not could then never be ascertained until it was justified or disproved by the sequel. If, on the other hand, a rational force is an interested action or policy founded on reasoning, then all of the affective forces enumerated are rational. It is just as rational to adopt a plan for satisfying your conscience or your honor or your self-respect as for satisfying your ambition. In short, M. LeBon's handling of the matter is naïve and antiquated. He fails to perceive the intimate interrelation between the factors of judgment and of feeling in human action, and he fails to recognize, as does Mr. Graham Wallas, for example, the important rôle of the reflective process in human conduct.

The author adds nothing in the present book to what he has already said on the collective mind. When he first said it, it had the merit of emphasizing something which had hitherto been neglected. But one can not read this book without feeling that such crude tools as "the national mind," "the ancestral mind," *etc.*, will not do the work. They need to be refined and sharpened before they can serve for purposes of explanation. Furthermore, the author appears to contradict himself on the question of the rôle of the individual leader. For he tells us on the one hand that "events so great and awe-inspiring can not have been dependent upon the will of any one man, but are rather due to deep-seated, remote, and varied causes which had been slowly piling up until the day when their effects swam suddenly into our ken" (p. 18); while on the other hand he tells us that "a collective opinion is usually derived from an individual opinion" and that the crowd is incapable of action without a leader to direct it (pp. 32, 33).

The "mystic" force, although it is the most important of all, is left appropriately shrouded in mystery. The author says of a certain M. Kostyleff: "I am very much afraid that he, as well as the many persons who still share his views, have no clear idea of what we are to understand by the term mysticism" (p. 167). The reader of this book finds himself in the same predicament. The only statement remotely resembling a definition is the statement that "generally speaking, one may say that mysticism is characterized by a taste for mystery(!), love of the supernatural, contempt of experience, and a belief that superior powers intervene in mundane phenomena" (p. 37). Among the "chief factors of the great conflicts of humanity," he cites "the mystic factors," such as "those forces which hurled the Arabs upon the Roman Empire," *etc.* So far it might appear that mysticism is the same thing as religion, which could scarcely be coordinated with affective and collective forces as a fundamental psychological category. But in the application to present events M. LeBon treats the patriotism of all the belligerent countries ("patriotism is an inherited quality of a mystic . . . nature" (p. 306)) and "the hegemony ideal" in German as mystic forces. The only notion that seems to be consistently preserved throughout is that a mystical force is not rational. How it is distinguished from affective and collective forces does not appear at all. M. LeBon says of mysticism that it is "the source of the easy explanations which satisfied mankind for centuries" (p. 37). The carping critic is tempted to say of the "mystic force" that it is the easy explanation which satisfies M. LeBon.

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Standard Method of Testing Juvenile Mentality. NORBERT J. MELVILLE. Philadelphia: J. B. Lippincott Company. 1917. Pp. xi + 142.

Announcement was made several months ago of a volume which would furnish "a provisional uniform method of applying the Binet-Simon tests as regards test order, details of administering and scoring each test, *etc.*" The present book is the laboratory manual embodying this method, which Director Melville and his assistants have worked out at the psychological laboratory of the Philadelphia school of pedagogy.

In the preparation of this manual there has been a definite attempt to follow as closely as possible the suggestions of the Informal Conference on Binet Testing held at Buffalo a few years ago. To describe the book briefly, one may say that it is a rather valuable elaboration and attempted standardization of the Binet-Simon tests as finally revised by their authors in 1911.

Part I. contains (*a*) certain general comments, warnings, and directions to be observed by those who use the Binet tests; (*b*) condensed translations of certain parts of the original publications of Binet and Simon, and (*c*) detailed explanations of how to enter results on the test record blanks prepared by Director Melville for recording the tests made on Philadelphia public-school pupils.

Part II. provides, in form convenient for use, all the printed materials necessary for the tests, and presents the detailed directions to be followed in administering each individual test and in evaluating the results. The typographical arrangement of this part of the book is such that the pictures and drawings appear on the page facing the subject being examined, while the directions for using these materials appear on the opposite page facing the examiner. The weighted cubes are the only materials difficult to obtain that are not incorporated in the book itself. This assembling of the test materials in a compact form, convenient for use, is in itself a distinct service to Binet test-users.

The general point of view of the author in the section devoted to comments and general directions is quite wholesome and worthy of consideration. The Binet tests are recognized as merely a "first aid" method of making tentative evaluations, which will be useful "in selecting and classifying those who are in need of further examination and of special education." The author recommends that for the future development of mental testing, "investigators strike out along new lines in the development of supplementary scales instead of attempting to make adaptations of the Binet scale."

Throughout the discussion, emphasis is placed upon the absolute necessity for uniformity of procedure. "This idea of radically altering the scale for subjects of different nationalities appears similar to the ideal of revising thermometer scales for various altitudes." In another connection we are warned that "the examiner must remember that ability to respond to standardized formulæ and questions without supplementary demonstration and explanation, forms one of the most important elements in the complex mental processes being tested throughout the scale." The author's plea seems to be for the general adoption of the Standard Method in all Binet tests, in order that a valid set of Binet norms may be built up for the various races and social groups of our population. Such uniformity of procedure in giving and scoring the tests is undoubtedly desirable, but it is doubtful whether the hundreds of Binet testers throughout the country will readily be pursuaded to give up their own individual habits and prejudices in these matters.

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JOURNALS AND NEW BOOKS

RIVISTA DI FILOSOFIA NEO-SCOLASTICA. June, 1917. *Josiah Royce e S. Tommaso d'Aquino* (pp. 217–223): F. Olgiati.—Royce's philosophy may be considered as a mean term between Hegel's absolute idealism and the theistic conception of the scholastics. He is superior to Hegel in so far as he regards God not merely as becoming, but as an absolutely perfect being. The main flaw of his philosophy consists in his identifying this absolutely perfect being with the finite beings which become. *La metafisica di Emilio Boutroux* (pp. 234–247): L. Borriello.—The scope of Boutroux's philosophy is the destruction of the barrier which was supposed to exist between nature and mind. This result is made possible by the doctrine of contingence, from which spontaneity and freedom of all beings necessarily follow. *La Filosofia e la guerra* (pp. 248–258): L. Botti.—In the great war which is now being waged, the spirit of Christian charity is gradually taking possession of all. The philosopher can thus foresee, as a result of the war, the birth of a better type of mankind. *Note e discussioni. Recensioni.*

Peabody, F. G. The Religious Education of an American Citizen. New York: The Macmillan Company. 1917. $1.25.

Reeman, E. H. Do We Need a New Idea of God? Jacobs. 11.00.

NOTES AND NEWS

Announcement is made of the publication of *Psychobiology*, a bi-monthly journal devoted to the field common to psychology and the biological sciences. The new journal is edited by Professor Knight Dunlap, of Johns Hopkins University, in association with John J. Abel, Johns Hopkins Medical School, Walter B. Cannon, Harvard Medical School, Raymond Dodge, Wesleyan University, Shepherd I. Franz, Government Hospital for the Insane, Herbert S. Jennings, Johns Hopkins University, and George H. Parker, Harvard University. The journal is published by the Williams and Wilkins Company, Baltimore.

Professor Ernest C. Moore, of Harvard University, has been elected president of the Los Angeles State Normal School. The institution is to be transformed into a teachers college.

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A CRITICISM OF COORDINATION AS CRITERION OF MORAL VALUE

WE wish to distinguish between organization and coordination of interests. By interest we shall ordinarily understand response of the organism to its environment, but the term is sufficiently neutral to be applied to introspective analysis as well as to behavioristic description. To reduce interests, responses, acts of attention, motor attitudes, activities, tendencies, dispositions or whatever you wish to call them, to a system does not necessarily mean to reduce them to harmony. A system of activities may include and require as one of its constitutive factors a certain conflict between its members. Football is a game consisting of a certain organization of activities, but it is an organized conflict. Coordination means harmony, but, according to the view which we shall hope to defend in this article, organization does not. We accept organization, but reject coordination as criterion of moral value.

We can not find a better statement of the principle of organization than in the *Moral Economy*:[1] "Morality is that procedure in which several interests, whether they involve one or more physical organisms, are so adjusted as to function as one interest." This statement we adopt with a proviso, which we do not think conflicts with the principle involved. The proviso is that the adjustment which enables the subordinate interests to function as one is not necessarily a harmony; it may be a certain status of sustained antagonism or balanced interplay of motor attitudes. Activities are organized if they are held in such a relation as to sustain a higher interest. But this relation which satisfies the super-interest may be one of mutual obstruction, not of unanimity.

Harmony as the supreme principle of morality is based upon a more fundamental requirement, namely, any act is moral which tends to increase the total magnitude of positive value. The aim of moral endeavor is the utmost possible expansion of every kind of good, meaning by good the satisfaction of any human interest what-

[1] R. B. Perry, p. 14.

soever. The reason why the fulfilment of some interests is morally evil is because these interests tend to diminish the total range of satisfaction. Now harmony is upheld as the mark of excellence because it means, *ipso facto,* that the several activities involved are not obstructed and that, consequently, there is no diminution of that value which inheres in their complete fulfilment. All conflict is evil because it means that two or more interests are preventing each other from that full measure of satisfaction which each would enjoy if they were delivered from this condition of mutual frustration.

To present the matter in this way is to reduce the project of human life to a beautiful simplicity. But it is artificial. Harmony and maximum value cease to be identical when there is discovered in human nature an ineradicable interest which can not be satisfied save in the balanced interplay of antagonistic impulses. When the existence of such an interest is granted, the question whether in any given case harmony is morally better than antagonism will depend upon the further question whether the satisfaction of this paradoxical interest will yield greater or less value than the satisfaction of the mutually frustrating tendencies. If the paradoxical interest represents more value than would inhere in the harmonious working of the conflicting interests, harmony would be an evil, and continuation of the conflict good, because harmony would diminish the total magnitude of positive value while conflict would increase it.

A preliminary and very cursory statement may be given of the nature of this interest which perpetuates itself through conflict. It is interest in the growth of the idea of reality, regardless of what the nature of that reality may be. It is the desire to compass a certain range of human experience, however much pain and conflict may lie within its bounds. It appears in that phrase: Let nothing human be alien to me. To enter into all that is human means to enter into a vast amount of conflict. But it goes even farther than that. It is the passion of Faust to explore the ultimate limits of all possible experience and to venture beyond the frontiers of human spirit. It is an interest which appears in science, in speculative philosophy, in art, in love, but above all in religion. In so far as experience involves conflict—and most experience does—this interest feeds upon conflict. Hence, to eliminate conflict would mean to frustrate this interest.

Professor Holt says in his *Freudian Wish* (p. 199): "For behaviorism there is one unbroken integration series from reflex action to behavior, conduct, moral action, and the unified soul." We, on the contrary, would maintain that this series turns a corner at the point where the individual becomes capable of conceiving and valuing a certain "universe" of experience merely because he

believes it to be the experience of another person. This is a case of love of reality for its own sake. For instance, to adopt a case used by Professor Holt, a boy may refrain from using tobacco at his father's behest, not merely because his "truth-telling father" is a danger signal for him like a signboard, "a thermometer, a clock, a seismograph, or an encyclopedia," but because the words of his father mark out a certain range of experience which the two can share in common, namely, the experience of refraining from the use of tobacco. This experience becomes in itself an object of independent value. It is valued because it is believed to be community with another personality.

This new departure in the integration series, as we hope to show, introduces a radical change in the mode of integration whenever it is operative. Here is where interpersonal communion first begins. At this point it is most proper, we think, to begin to speak of personality or soul. Also at this point coordination ceases to be the sole condition of integration or organization, since in order to participate in some desired experience it may be necessary to sustain a certain status of antagonistic reaction precisely because the valued experience consists of such a state of uncoordination.

This new principle may be applied to moral procedure. "Fulfilment of a simple isolated interest is good; but only the fufilment of an organization of interests is morally good."[2] But this organization may be accomplished in either of two ways. The first is to so coordinate antagonistic activities that each may function without disturbing the other. The second way is to sustain a continuous conflict of tendencies and thereby fulfil that creative interest which seeks the progressive expansion and diversity of experience.

But not all antagonisms can be subordinated to the function of creating some desired experience. We will distinguish conflict which is destructive to value from that which is creative of value by calling the one external, the other internal. Internal conflict may take place between two individuals. By that we mean that while the two persons disagree, they understand each other. Each mind comprehends the total purpose of the other, although the two purposes are antagonistic. To do this each person must reproduce in imagination the mind of the other; he must be able to imagine himself in the other man's place. All mutual interpretation, all intelligent conversation and discussion is more or less of this sort. But to imaginatively reproduce in my own mind the purpose of another, means that I must actually incorporate in my own organism the other man's purpose. I must assume the motor attittude of that purpose; and that means that it becomes one of the impulses which

[2] R. B. Perry, *The Moral Economy*, p. 15.

I experience. Inasmuch as I retain my own system of interests, but at the same time embody that of the other man, the antagonism between the two is an internal conflict.

Such a conflict develops the two antagonistic systems. Each learns something from the other. Each is stimulated to develop new lines of activity in opposition to the other, and to take over something from the other. This is illustrated by any discussion or intelligent argument which does not degenerate into mere contention. A political campaign is a good example of such a conflict. We all acquire a more vivid consciousness of national issues, are led into new regions of political experience, by such antagonisms, and generally the more intense the conflict, the more fruitful it is in awakening us to consciousness of the interests of our communal existence. So we say that internal conflict is creative of new experience; it brings new horizons into view; it increases the range and multiplicity of interests in which the individual engages. Hence, in so far as growth of experience is valued for its own sake, internal conflict has intrinsic value as being the process of that growth.

External conflict appears when there is no imaginative reproduction by each opponent of the other's purpose. Men in trenches shooting one another down with machine guns are not engaged in creative antagonism. But between the opposing generals or other strategists the conflict is internal, inasmuch as strife between these officials consists of their mutual comprehension of one another's purposes to a degree, and of the plans and counterplans which are made. Between them it is as truly a form of play and has as much creative value as a game of chess. But whenever two or more distinct physical organisms are opposed to each other, without a motor attitude in each which represents the purpose of the other, the conflict is external and has no intrinsic moral value.

On the other hand, as we have seen, that internal conflict may appear in the case of interaction between two individuals, external conflict may apply to the incompatibility of desires within the single organism when no other individual is concerned. A conflict is external when the summation of stimulation, accumulated by reason of the mutual obstruction of two neural processes, does not discharge freely into the cortex in such a way as to cause an active play of the creative imagination. Precisely so far as this concentration of energy at the point of obstruction is not drained off immediately into the cortex, and there diffused without congestion at any point, the whole process is dissatisfying and there is total loss of value. But so far as these conditions are fulfilled, there is total gain in value, providing this creative play of the imagination is valued.

An illustration may serve to make the matter plainer. When a man finds himself in the midst of a burning building a certain instinct is aroused which we call flight. The sensation of heat and darting flames stimulates to activity a certain coordinated response to which the organism is innately adapted, or, in any case, has become so wrought in habit as to function automatically. This coordinated and largely automatic response consists of energetic efforts to get out of the building by the shortest route. But if at the first impulse to flight he discovers that his hands and feet are immovably bound, the neural process finds that the well-worn path of ordinary discharge is closed and there is consequently a massing of neural energy which, finding no outlet, produces the feeling of extreme disagreeableness such as acute fear, horror, and the like. But from personal accounts of those who have had such experiences, and perhaps from reminiscences of our own, we know that a further condition may arise. Men under such circumstances, we are told, sometimes have "all their past life pass before them" in vivid imagery; or a scintillating play of image and idea about some past or present situation. Such experiences can only be due to the discharge of amassed stimulation into the cortex.

Now simple flight is coordination. It is harmony of impulses and highly satisfying to the organism. Any obstruction to such activities, however, whether due to external hindrances like bound hands and feet, or to the antagonism of a counter-impulse like that of turning back to get valuable documents, is highly dissatisfying, if the process ends in mere accumulation of undischarged stimulation. It is what we have called external conflict. But it is internal conflict if there is a ready diffusion throughout the higher cortical areas producing such vivid imagery as that to which we referred. This activity of the mind generally assuages the distress of the frustrated impulses, even though no overt action results. Thus coordination is conservative of values; internal conflict is creative of values; external conflict is destructive of values. The values conserved by coordination consist of the habitual functioning of the organism; the values created by internal conflict consist of newly generated mental activities.

What are the conditions which render possible this creative function of conflict? They consist of a certain plasticity and heightened tonus of the cortex as a whole. We would quote C. J. Herrick on this point.[3] He says that the period during which the creative tendency is dominant in man is "limited to the age during which the association centers, whose form is not predetermined in heredity, remain plastic and capable of modification under environmental

[3] *Introduction to Neurology*, p. 315.

influence. Ultimately even the cerebral cortex matures and loses its power of reaction except in fixed modes. Its specialized tissue—originally a diffuse and equipotential nervous meshwork—becomes more or less rigid. The docile period is past, and though the man may continue to improve in the technic of his performance, he can no longer do creative work. . . . Whether this process occurs at the age of 20 or 80 years, it is the beginning of senility. . . . Many a boy's brains are curdled and squeezed into traditional artificial molds before he leaves the grades at school . . . senile sclerosis of the mind has begun by the time he has learned his trade."

This improvement "in the technic of performance" which takes place when "the docile period is past" is precisely that state of mind which renders impossible the creative function of thwarted impulse. In this condition coordination reaches its maximum, and the greatest efficiency in conserving old values is attained, but the creation of new values is relatively impossible. Or, even more pertinent, interest in the growth of new experience is dead. The onward-pressing consciousness which appears in the form of curiosity, speculative philosophy, and progressive religion is no longer present. The highest moral principle for such a mind is coordination, because it is only by this method that such a person can realize his largest range of values. But that does not mean that coordination is absolutely the best method. It is only second best; it is the last resort when creative functions fail.

Of course, the degree to which the mind loses its plasticity and becomes rigidly specialized not only varies greatly from person to person, but also in the same person from time to time. Anything which increases the neural resistance of the higher centers, such as fatigue, ill-health, or the chronic persistence of some gross passion, will do this. The "dope fiend" can not tolerate frustration of his desire for opium or cocaine. Any such obstruction is for him dead loss of value without any compensating creativity of the mind. In like manner any highly specialized tendency, stereotyped by habit, will not readily yield up its energy to the diffusive activity of the cortex.

But the normal youthful mind among the higher types of humanity seems to have a predisposition to act in this creative manner. The unspecialized tissue, unconstrained by any fundamental pattern, tends to function as a whole. Of course this is not meant to imply that the brain has no pattern. A mere confused agitation of the cortex would not even be dreaming. But we mean that any increase in the stimulation which reaches the cortex will tend to overflow from any established paths, and pour into new channels, thus forming new connections throughout the neural

mechanism. Many things may conspire to make this overflow more difficult, such as the deep plowing of specialized channels by long-established habits rigidly stereotyped; the persistence and overwhelming force of some specialized passion; the hardening of tissue which comes with age; the inertia of fatigue, *etc.* Nevertheless, in the healthy vigorous human organism there is a persistent tendency to multiply and diversify the activities of the mind. This might almost be called an instinct of creativity, a predisposition to form new combinations of older units of activity through this functioning of the unspecialized processes.

But this interest in creativity can be satisfied, this forming of new combinations becomes possible, only when some sort of problem arises. But a problem only means that some two or more impulses conflict with each other. So we reach the conclusion that discord of interests is a value because it is the sole condition which satisfies one of the inalienable interests of human nature, namely, the interest in creativity. Whether the mutual thwarting of impulses does, or does not, have value depends on whether there exists in the individual this state of mind, this onward-pressing consciousness, which seeks that satisfaction found in the forming of new combinations and the consequent growth in the range and vividness of consciousness. For such a mind all experience would have positive value, the conflicts as well as the harmonies, just so far as all experience is integrated in the growth of an expanding consciousness. Hence, the supreme moral achievement would be the establishment of such a state of mind, since it is this attitude and no other which can mediate the maximum quantity of positive value. It is this creative mood which realizes the greatest wealth of good.

The fundamental ethical proposition of the *Freudian Wish* by Professor Holt is that all conflict of desires or wishes is morally evil; and that the way of righteousness is to resolve this conflict in such a way as to preserve both antagonistic interests without the suppression of either. Conflict, as Holt demonstrates, arises from the simultaneous arousal of two antagonistic responses, one of approach or acceptance, the other of avoidance or rejection. But such opposition can only occur, he maintains, when the good and bad features in the object of desire have not been discriminated and so separated in consciousness as to allow positive response to the good and negative response to the bad. By such discrimination the antagonistic impulses are dissociated so that they no longer thwart each other.

He illustrates this conception of moral procedure by two instances which are worthy of becoming classic. Suppose you happen upon some mushrooms. You like mushrooms and want to eat them.

But on recalling that some species are poisonous you draw back. Here is a conflict of impulses. What shall you do about it? Hasten to a learned friend or the *Encyclopedia* and ascertain the distinctive features of poisonous and wholesome mushrooms, respectively, so that you can readily and accurately distinguish the two; then you will no longer have that disagreeable experience of trying to eat mushrooms with the feeling that you are taking poison. Likewise he exhorts the young lady from the country not to suppress her interest in the theater and the friendly companionship to be had in the hours of recreation after work. Neither should she sever her relations with the church and other activities which conform with the moral instructions received in her country home. But she must learn the difference between the good and the bad features of the theater, seek the one, avoid the other and thereby save her soul.

There are just three possibilities in case of such conflicts as these, says Professor Holt. First, suppress one of the two antagonistic impulses in order to follow the other; second, vacillate between the two, giving part time to one, and part time to the other; third, the process of discrimination and coordination. If either of the first two methods is followed, the minimum of value is realized, for both suppression and vacillation mar the satisfaction of the interest which for the time being is dominant.

We have proposed a fourth possibility; and we believe Professor Holt inadvertently delivers himself over to our position. He does so when describing the state of mind of the wise virgin who goes to the theater with the resolve to find some means of enjoying the good which the theater may offer without incurring the evil which she knows is there. Her attitude toward the theater as she accompanies her escort to the place of amusement that first night, is described by Holt thus: "The theater's attractive and repulsive aspects, not being dissociated (in her mind) work on one another directly, and this balanced interplay works itself out in a discriminating line of conduct."[4] Now this status of "balanced interplay" of antagonistic reactions is manifestly not a case of coordinated response. It is not what Holt calls integration. To be sure he immediately describes how it may lead to coordinated action. Nevertheless, this state of mind in which the young lady attends the theater for the first time, this antagonism of "motor attitudes" does, according to Professor Holt's own statement, give "full play to all the individual's tendencies, and these are invariably to avoid evil."[5] But is not this organization? It is organization under the dominant purpose of avoiding evil. Yet it is not coordination. It is the

[4] E. B. Holt, *The Freudian Wish*, p. 123.
[5] *Ibid.*, p. 124.

conflict of two motor attitudes maintained in "balanced interplay." It is a case of antagonistic responses being integrated prior to the dissolution of their antagonism. Moreover, if it gives "full play to all the individual's tendencies" it must have immediate value; it must be a state of consciousness which is valued for its own sake, not merely as a means. The burden of our whole argument has been to demonstrate this positive and independent value of mental excitement. Is not this acceleration of mental process, this quickening of the powers of judgment and appreciation, that which above all else we cherish most?

It is possible to respond to an object as the concretion of all its qualities, *i. e.*, as an individual, only when each quality arouses a corresponding sensori-motor reaction. But this total complex of responses in the form of impulses or modes of motor readiness to act when simultaneously aroused, can not possibly be coordinated. All the several qualities of any concrete object demand such a diversity of reactions that it is impossible that they should be harmoniously adjusted. Hence, when one responds to an object as an individual, a great number of sensori-motor activities arrest each other, and are held in a state of active equilibration.

Now, when there arises this state of equilibrated conflict which constitutes response to a concrete individual, one experiences a more or less intense feeling which in its divers forms may be humor, or love, or esthetic appreciation, or religious rapture as well as other states of consciousness which our language may or may not distinguish with a descriptive name. But in all such cases there is play of the imagination, a roaming of the fancy. It is out of such states of consciousness that some of the most remarkable mechanical inventions, the greatest works of art, and the noblest prophetic utterances of religious seers have arisen. Do such uncoordinated responses, constituting the total reaction to an individual, have no immediate value? Artists, lovers, religious devotees would rise in revolt at such a negative suggestion. Socrates loved such antagonisms as these. He scarcely argued in order to reach a final conclusion or agreement. He argued for the sake of the "midwifery" involved in it. Socratic midwifery represents the creative value of conflict which we are trying to describe.

When Professor Holt goes on to the further illustration of the mushrooms, he ignores the fact of uncoordinated organization altogether. In fact he never admits it except by accident. According to this further statement, his conduct does not become integrated until he has clearly distinguished the two kinds of mushrooms so that he is able to respond to each as a distinct entity. He does not admit any intervening state of consciousness, like that which the

young lady enjoyed, consisting of a "balanced interplay of motor attitudes" which was satisfying in itself. On the contrary, in the case of the mushrooms, he integrates his conduct only by disintegrating the object of response, *i. e.*, by selecting one single quality from that totality of qualities which constitutes mushroom and reacting to that isolated quality alone.

But if integration of conduct, which is the criterion of moral behavior, proceeds only by the disintegration of the environment, the possibility of reacting to the totality of the universe as an individual becomes more and more remote as ethical behavior becomes perfected. Therefore if religion be, as Holt seems to imply, response to the universe as a single object or totality, moral development moves away from religion rather than toward it.

But the only point which we now wish to make is to show the necessity of giving place beside coordination for this second principle of procedure which is no less moral and no less a mediator of value than is coordination. It is impossible to regard conflict of tendencies as merely a means to the attainment of harmonious action, because in actual experience it is not so. If we did subordinate conflict to the place of means and maintain harmony as the end of all moral regulation, the greater part of human life would become a dreary desert to be traversed for the sake of the little oases of coordination which are scattered here and there throughout the expanse. For the most of our life is given over to adjusting uncoordinated activities, to the breaking down of outworn systems and the building up of new ones, only to find them inadequate, or very quickly becoming inadequate again. The history of ethical practise and principle shows how continuous has been this process of casting into the junk pile the systems which yesterday were constructed with such care. If this process of breaking down and building up, essentially a process of conflicts and maladjustments, has no independent value in itself, but is merely a means to the attainment of those precarious and transitory periods when an established coordination is able to function adequately, how miserable does human existence appear! If morality is the quantitative enlargement of the total good of human life, I can imagine no moral achievement more significant than the procedure which would make maladjustment and discord as such a form of positive value.

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THE CONCEPT OF THE UNCONSCIOUS

WE have come to operate very freely with the concept of the "unconscious." The justification of its use is taken to be a self-evident fact. Unfortunately, it is this matter-of-course attitude towards the concept that keeps us from becoming clear in our minds as to what is really meant by it and in how far its usage is justifiable. The loose and undetermined nature of its meaning is threatening to become disastrous in its usefulness. This state of affairs has been accentuated by the fact that the concept "unconscious" has been taken up and applied to their own needs by the cultural sciences,—by anthropology, sociology, and culture history. The result is that the concept, already vague in psychology proper, acquires ever new shadings of meanings as its application is widened to the study of cultural phenomena. In order to bring order into this chaos it is incumbent upon the various sciences to determine precisely the limitations of the concept as they are demanded by the specific character of the problems. The problems of individual psychology which have given occasion to introduce the "unconscious" are decidedly not the same as those which bring about its employment in ethnology. Why, then, use the concept as an undifferentiated something which every theorist may apply according to his own sweet will? On the following pages I should like to suggest certain lines of thought along which the concept of the unconscious may gain in individual psychology a more strictly scientific determination. These suggestions are intended to be methodological and, therefore, aim in the direction of a philosophical arrangement of the concept within the general system of conceptualizations in psychology. For, what is methodology but the attempt to bring into a systematic structure of logical relations the various concepts with which a science operates?

The problems which in individual psychology led to the introduction of the "unconscious" arose as soon as the attempt was made to bring the different elements of our psyche into causal relations comparable to those of the natural sciences. It was found that the temporal succession of many ideas, emotions, or volitions could not be converted directly into a causal relation without assuming the operation of certain intermediary psychic processes. Their existence was "assumed," as they did not seem to be "conscious." The factor x thus introduced was the realm of the unconscious. Every psychic phenomenon came now to be classed either as conscious or as unconscious. Instead of one realm of the psychic there now existed two, of which, however, the one was a *terra incognita*. As a result, the land of the unconscious became the playground of psycho-

logical theories. They naturally thrived well in the ill-defined jungle of the unconscious. The most conspicuous theory of this kind in vogue to-day is that of the psycho-analysts. I regard it as a significant fact that just these theorists, whatever the value of their empirical data may be, have contributed almost nothing to the conceptual determination of the unconscious. The proper plausibility of their theoretical structure is conditioned by the assumption of a *terra incognita*. Into it they can conveniently banish all psychic phenomena which they regard as unamenable to an interpretation of the conscious. If popular psychologizing is content with this method, we can expect from science that it strive towards an interpretation by clearly defined terms.

A vague and undefined concept is mischievous in every science, but especially so in psychology. On account of their very nature the phenomena of this science are ever in danger of being interpreted figuratively. In that case a metaphor passes as an explanation. A classical example of such a type of psychological interpretation is the conception of the mind as a *tabula rasa* on which the ideas make impressions as the stylus on wax. On account of such metaphors psychology is ever threatened by the abyss of popular psychologizing. The notion of the unconscious is the most prolific metaphor that has as yet arisen in psychology. Nothing could be more stimulating to the imagination than the realm of the unconscious as the *Nibelheim* where the dark current of the repressed libido flows. Is it not from here that the mists rise and becloud the horizon of the conscious? They would indeed shroud it in eternal darkness, if it were not for the salvation by the psycho-analytic Siegfried.

The psycho-analyst—and the same applies to similar theorists—conceives the unconscious as a realm outside of the conscious. The line of thought is that, since consciousness is synonymous with psychological experience, only the conscious, but not the unconscious, can be conceived in terms of that experience. Furthermore, it is necessary to consider a causal relation between the realm of the unconscious and that of the conscious. Phenomena in the former determine phenomena in the latter. The puzzling problem that thus arises is that the conscious which is subjectively experienced is causally determined by the unconscious which is outside of the experienced. This antithesis is solved by the theorist of the unconscious by introducing a metaphor. The unconscious is thought of as radiating certain forces that influence consciousness like mechanical agents. Is such a conception not on the same level as was the idea of the *tabula rasa*?

This leads us to a methodological principle that is fundamental for a consideration of the unconscious. It is obviously incorrect to

interpret the relation of the unconscious to the conscious in any other than homogenous terms. But as consciouness is by definition subjective experience, it follows that in an interpretation of the unconscious in its relation to the conscious the unconscious must likewise be conceived in terms of conscious experience. My thesis, therefore, is that the unconscious must be understood out of the conscious. A similar line of thought has led Wundt to deny the existence of the unconscious altogether. He defines the soul as the aggregate of all experiences of consciousness. If this definition is accepted, it is absurd, according to Wundt, to speak of the unconscious. I believe that this is absolutely true as far as it goes; however, it does not seem to me to be the whole truth.

I think it is quite feasible to attribute to the concept of the unconscious such a meaning as to give it a definite place within our terminology of subjective experience. This meaning must be gained from introspection, as consciousness only exists from this point of view. From the absolutely objective point of view of behaviorism a distinction between the conscious and the unconscious is a *contradictio in adjecto.*

Instead of conceiving the unconscious as a psychic realm outside of and contrasting with the realm of the conscious, it would seem to me that the unconscious is simply a special phase of the conscious. More precisely stated, the conscious is the fundamental concept, while the unconscious is its limiting concept. No idea is entirely conscious. That part of an ideational complex which is at a given time in the center of attention appears to be conscious in the strictest sense of the word. But, as even the most superficial self-analysis reveals, there are many additional elements in the complex that are not in the focus of attention, but are nevertheless "felt." These are the elements that give to the idea its specific affective[1] setting. No idea is free from such a milieu, not even the most abstract one. When we see the picture of some person well known to us, our attention may be directed at the moment to a certain facial expression of this person. But the visual picture that arises is inherently combined with an affective tone determined by all sorts of associations. These associations refer to the most varied experiences in connection with the person in question. The elements originally in the center of attention will not remain there, but are soon replaced by elements which have hitherto been in the affective fringe of the complex. In the example cited above the image of the facial expression may be

[1] I use the term "affective" as referring to the subjective forms of feeling or to the experiences of the so-called "inner sense." It stands in contradistinction to "ideational" which refers to the "objects" of mental apprehension. The term "affective tone" which I use so often in this paper, is the subjectively experienced coloring of a psychic complex.

superseded by the memory of a certain eventful meeting we may have had with this person,—one of the elements that determined the affective milieu of the first idea. This event is recalled and its details are brought into definite relations with one another. Thus the new idea gains plasticity. I should like to call this process of generating an idea one of psychological amplification. The purport of this term consists in the fact that one idea does not really "replace" another one, but that in the continuity of psychic life the new idea becomes something qualitatively different from what it previously was. The idea is evolved out of a special feeling, or, as I should like to call it, out of an affective tone. It is an essential part of my argument that the amplification is not a conflict of different ideas and the final victory of one of them—for this would again be a metaphor of popular psychology—rather a psychological metamorphosis of the affective to the ideational. Beyond this transformation psychology can not go; it is part and parcel of the dynamics of psychic life and must be taken as an ultimate and irreducible phenomenon of subjective experience. It is demonstrable only in strictly psychological terms, that is to say, in terms of immediate psychological experience.

The affective tone is normally experienced as the psychological effect of some former experience, and the process of amplification consists, consequently, in expanding the "feeling" of this experience to an idea of it. This makes clear the intrinsic conceptual connection between amplification and memory. The affective tone is representative of, but psychologically not equivalent to, the "ideational memory" of a former experience.

An affective tone, as we have seen, is a potential idea. When it is actualized, that is to say, amplified, we speak of an act of memory. Wherever this takes place it is quite superfluous to introduce into our psychological terminology the concept of the unconscious. But the situation at once changes when we deal with an affective tone that can not be amplified into an ideational image of the experience represented. For it is not at all essential that the actualization of the potential idea take place. Of the psychological factors that determine the affective setting of an idea some are more readily amplified into new ideas than others. To return to our example of the picture of a well-known person, one affective tone may represent a vivid idea of an eventful occurrence associated with this person and may be amplified with great ease, while another one may refer back to some remote experience and can be amplified into an ideational image only with the greatest effort of our attention. Finally there are affective tones that can not be amplified at all. These are the ones that are of special interest to us from the point of view of the "unconscious."

The central thesis I should like to formulate is that in all cases of so-called unconscious processes we are really dealing with an affective tone which can not be amplified into an ideational image of the experience represented. The dynamic metamorphosis of the affective to the ideational is for some reason inhibited. The non-actualized affective tone refers back to a specific experience in exactly the same way as does an act of memory. It is called unconscious because its subject-matter is not visualized in the form of an idea.

The objection that will be made to this assumption is that inasmuch as I am attempting to define the unconscious in terms of the subjective experience of consciousness, it is inconsistent to assume a causal relation between a non-actualized affective tone and a past experience since the actualized idea alone could give us a conscious experience of this relation. It will be pointed out that even if there be affective tones that do not become amplified, they could not be used for the purpose of interpretation as they are not experienced in consciousness as being representative of specific past experiences. In other words, it will be objected that I introduce an extra-conscious element into a terminology that pretends to be exclusively one of subjective experience. This objection would indeed be valid if our psyche were something static, that is to say, if our ideas could be studied like impressions on a *tabula rasa* or like fossils in a geological deposit. It is the dynamic nature of the psychic life that makes it possible to draw inferences from the conscious concerning the nature of the unconscious.

The existential relation of a non-amplified affective tone to a specific experience can be inferred from different points of view. First, as already stated, there is a continuous gradation in the ease with which different affective tones may be amplified into their respective ideas. The introspectively experienced approximation of this series towards a point where the amplification is zero makes the assumption of the existence of this point itself a logical postulate. Secondly, those cases where the process of amplification extends over an appreciable length of time are comparable to the cases of zero-amplificability. For subjective experience both types of phenomena are moment for moment similar or even identical and are often only distinguished by the ultimate breaking in of the ideational image in the former case. This breaking in from this point of view may be regarded as epiphenomenal. Thirdly, a concrete demonstration of a non-amplified affective tone is possible in all those cases where the process of amplification is brought about in a quasi-experimental way and is conditional upon the introduction of a specific sense-perception.

Let me cite for this last type of demonstration an example from

my own psychological experience. I have been under the effect of anesthetics several times and on each occasion I experienced very painful hallucinations while losing consciousness. These hallucinations consisted in very vivid visual and acoustic perceptions and were of exactly the same nature in each case. While I still experience a marked affective tone of pain when recalling the external circumstances that were associated with the anesthesia, it is quite impossible for me to amplify this tone into a clear idea of the subject-matter of the hallucinations. But this state of incomplete amplification, which obviously is related to so-called unconscious experience, at once changes into a clear ideational image of the specific hallucinations when I perceive the slightest smell of ether. The faintest perception is sufficient to cause this effect. The theorist who adheres to the idea of a separate psychic realm of the unconscious would speak in this case of an idea "rising above the threshold of the conscious." I see no reason for introducing such an idiom into our terminology, since the above phenomenon differs in no essential respect from the amplification of any affective tone into an idea. What makes it seem novel is simply the fact that the abnormal nature of the anesthetical stimulus makes it possible to analyze it out of the specific psychic complex more readily than is the case with the causation of ordinary affective tones. The so-called unconscious nature of the process consists in the fact that the affective tone which represents the past experience—or more correctly speaking a certain part of the experience associated with the anesthesia—can not be amplified into an idea without a reintroduction of the original stimulus.

There is no reason to doubt that a process of amplification is brought about in innumerable instances of every-day life by the accidental introduction of relevant stimuli. Thus, for instance, the perception of a certain spoken word may bring a vivid ideational image of a past experience to our mind, an experience which may already have determined a specific affective tone before the introduction of the stimulus. The situation may be such that an analysis may reveal at once the specific word that acted as a stimulus for the process of amplification, but at the other extreme it may be quite impossible for introspective analysis to discover the stimulus in the complex. In either case the phenomenon is only relatively different from the hallucinations referred to above, inasmuch as we are dealing with normal and inconspicuous stimuli instead of exceedingly uncommon ones.

It must be remembered that the affective tones that are amplified into ideas may be of a more general or of a more specific character.

The latter type is naturally more likely to be more conspicuous in our subjective experience. The more general they are the more easily may they be overlooked in introspection. Thus it is not possible to infer that an idea was not preceded by any affective tone at all from the fact that we can not recall such a specific psychological setting out of which the idea was amplified. It would seem that in such cases an affective tone did exist and was actually experienced, but can not be determined by our analytical introspection on account of the general character of the affective tone in question. Our whole line of argument on this subject is necessarily characterized by the fact that we constantly move within the border-area between demonstrable and inferential evidence, inasmuch as our limiting concept, the unconscious, must be inferred indirectly from the demonstrable conscious experiences.

A fruitful field for the study of the psychological processes in question is offered by an analysis of the recollections we have of our dreams. They are recalled with varying degrees of vividness. Sometimes we have very plastic images of them. But often a subtle self-analysis reveals mental states in which a dream is represented by an affective tone that is not at all or only partially amplifiable into an idea of the subject-matter of the dream. Such affective tones usually fade away very soon after awaking. Sometimes one can even experience a rapid decrease in the degree of amplifiability just after awaking from a vividly experienced dream. A phenomenon of unusual interest is sometimes experienced for a few moments after a light sleep when the persisting affective tone is a feeling that what has just been dreamt was in some way familiar to us, that we had experienced it at some previous occasion, while it is, however, quite impossible to attain an ideational image of the "familiar" incidences of the dream.

Very likely many kinds of psychopathic phenomena must be interpreted in a similar way. For instance, persons who have acted upon a suggestion received in a state of hypnotism state that they were prompted by a certain feeling that they must act in that particular way, but they are unable to recall ideationally the experience of which this feeling is representative. The psychological abnormality of such a hypnotic phenomenon appears to consist in the inability to amplify an affective tone which under normal circumstances would have developed at once into an idea. The phenomenon itself, however, is in no way peculiar. Our every-day life is replete with situations of the same type. It is the demonstrability of the sequence of cause and effect that happens to make the hypnotic suggestion and the consequent determination of volition appear striking and unique.

The various interpretations of psychological phenomena I have given in this paper must be regarded merely as examples illustrative of my line of argument. Whether or not all of these interpretations will prove to be correct is rather immaterial. What I have attempted to do is to suggest a type of interpretation that would be logically consistent from an epistemological point of view. We can not interpret the conscious and the unconscious from two entirely distinct points of view. In order to gain the unity of perspective necessary for every scientific method of interpretation, I have postulated that the unconscious is part and parcel of consciousness, and that the one must be interpreted in the light of the other. The notion of a separate realm of the unconscious is a monstrosity of popular psychology.

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PHILOSOPHY AND EDIFICATION

THERE was a time when philosophy was unique in the college curriculum. It was depended upon to lend dignity to the work of the senior year and had about it something of the aspect of an Initiation into the Mysteries. It was taught by the chief executive of the institution as his especial and cherished prerogative, and, as he was almost invariably a minister of the gospel, the philosophical studies involved "Christian Evidences" almost to the point of evangelism. All this is undoubtedly obsolescent. The renaissance, having gradually gathered strength for four centuries, is at last penetrating even our institutions of learning, and the most treasured relics of medievalism are doomed relentlessly to eventual oblivion. It is amazing in how short a time what was once genuinely sacred has come to seem grotesquely sanctimonious. But now the pendulum is swinging high in its opposite arc and philosophy is adjured in the name of its intrinsic dignity to renounce all function of edification and to pursue its abstract goal in the unruffled calm of disinterested and dispassionate thinking. In some quarters the squeamishness on the subject has become so acute that a man scarcely dares speak above a whisper lest he should seem to be an advocate, nor to be in earnest for fear of seeming to be dogmatic. It is entirely possible, too, that such may be the typical attitude of philosophy in the future. But it is also possible that that latter state would be worse than the first. At least, one begs to think that philosophy should be slow to repudiate entirely its traditional service and responsibility.

No doubt the present revolt against all "inspirational" efforts in philosophy is primarily a protest against intellectual dishonesty

which is so often the outcome of a professed aim to edify. Sometimes a man shrinks from teaching what he really thinks explicitly because he fears it may "shake the faith" of his students; his aim is commendable, but this way hypocrisy lies. On the other hand, too restless a desire to edify may react directly on the thinking of the teacher himself, so that he becomes a passive mouthpiece for tradition rather than a quickening spirit in the quest of truth. In the face of either of these alternatives no protest, of course, could possibly be too solemn, and one can only admire those who most fearlessly utter it. At the same time, however, the protest itself is aimed at the edification of the profession and deals immensely more with the ethics than with the mere methodology of the philosopher's undertaking. It is hard to set a limit to the indirect inspirational quality that the pursuit and teaching of philosophy may, and certainly very often does, have. It is the purpose of this paper, in spite of a sincere respect for the timely protest just referred to, to defend the claim of a legitimate place in philosophy for a quite unique and perfectly definite office of edification.

It is no mere accident that ethics should, by almost universal consent, be regarded as a collateral of general philosophy and metaphysics. James quotes with approval the view of Chesterton: "The most practical and important thing about a man is still his view of the universe. We think that for a landlady considering a lodger it is important to know his income, but still more important to know his philosophy. . . . We think the question is not whether the theory of the cosmos affects matters, but whether in the long run anything else affects them." And such seems to be the tacit view of our whole educational system in regarding ethics and metaphysics as correlative aspects of philosophical discipline.

Not only present practise, but all past history as well, attests this relationship. Stoicism, epicureanism, Christianity, were theories of the universe or ethical systems, just as you please; and it is very doubtful if such a general *appercu* could possibly be one without being the other. The special sciences are in a manner saved from this practical responsibility because of the very nature of the material with which they deal. It is hard for any student to feel that his soul's welfare hinges much on the detail of a botanical specimen or the constitution of a chemical compound, but misgivings arise and questions multiply the instant one's general world-view is touched upon. Such a state of affairs may not be desired nor desirable from the side of the philosophical profession, but it is *de facto* the case. The actual material with which ethics deals is obviously more closely related to sociology, for instance, than to metaphysics, but it is not probable that ethics will very soon find its academic allegiance trans-

ferred to that department. In this field the point of view counts for more than the subject-matter; and a man's metaphysics, expressed or assumed, unavoidably forms the background of his thinking and lends its perspective to his life. Philosophy may not consciously aim at edification, but the chances are overwhelming that that will be one of two simple alternatives as to its final outcome and total effect, and it is hard to see any good reason why the philosopher should remain arbitrarily and dogmatically indifferent to so real an element in the situation.

This does not mean, however, that one need permit one's views to become biased in content by the rhetoric of popular tradition or the lure of one's native longings. The latter at most might be allowed to guide the mode of presentation and the distribution of emphasis. Indeed it is doubtful if anything could more easily defeat the end of edification than a cowardly and equivocating attitude on the part of men who profess, etymologically, to be "lovers of wisdom" in its pure estate. College students are rarely blind to the slightest lack of frankness or independence in the expression of a teacher's views, and especially is that the case in philosophy, because it deals with such ultimate and intimate things. It arises in wonder and anxious questioning, and whatever its objective speculations, it is idle to expect it to become, in its fruition, an indifferent and impersonal affair. Human philosophy does not have to be anthropomorphic in its content in order to be anthropocentric in its foundations and final interests; it is perfectly possible to combine scrupulous intellectual honesty with a broad and deep human sympathy.

If, accordingly, equivocation is itself unedifying, so also is explicit exhortation, not because its purpose is false, but because as a method it is almost certain not to succeed. It proclaims that the exhorter has a specific ax to grind and his message, whatever it is, is correspondingly discounted. In other words, its very sin is that it fails to edify. This also answers in advance the obvious rejoinder that other agencies are already paid to attend to the "salvation" of the community, of which burden, therefore, philosophy may well feel itself relieved. There are many minds, especially those who would find philosophy congenial, who are constitutionally insensitive to ecclesiastical exhortation in any form,—mainly, no doubt, because all dogma is an admitted and explicit prejudice. The latter fact also makes it difficult, if not impossible, for ecclesiastical agencies to promote, even when they themselves do not lack, the virtue of intellectual honesty, the cardinal virtue of science and of constructive thinking.

But suppose the philosopher finds that the purpose to edify stands hopelessly at odds with his own sense of intellectual integrity? That

might conceivably be the case. If the reality of the world as he is forced to see it simply *is* not inspiring or elevating in any sense, the situation is not indeed a happy one. But it only raises the further question as to whether *every*thing is worth teaching. If one were profoundly convinced that the ultimate aspect of the world is absolutely dismal and discouraging, there would be little to be gained in spreading the discouragement. If all the dignity and value and beauty of life rests upon illusion, one earns a miserable living whose job in the world is merely to dispel that illusion. If there were no bliss *except* in ignorance, knowledge itself would be a poor virtue.

It is questionable, however, whether there is or ever has been such a view of the world. There have been systems of pessimism, no doubt; yet for the hero there is room in every one of them. Even Schopenhauer finds a "way out," a salvation through art. And in so far as Schopenhauer inspires men to face pain courageously, to be austere and self-reliant in a universe that offers little, and to find in beauty the apotheosis of the heart's desire, he is edifying them even in the midst of his metaphysical gloom. No one would accuse Bertrand Russell of sentimentality. A theory of perceptual classes, neutral entities, and logical systems resembles little enough an anthropomorphic gospel. But even here the free man finds an ideal to worship and becomes himself the Atlas of the moral world. These, indeed, are good examples of the kind of inspiration philosophy may furnish without resorting to exhortation, to orthodoxy, or even to explicit moralizing.

There are two different purposes for which a man might seek to be guided through a city, two points of view from which he might see everything it contained. On the one hand, he might have the casual interest of a visitor, merely, or that of a geographer or statistician or shopper. In this case, whatever his specific errand, his interest would be detached and relatively impersonal. On the other hand, he might see it all from the standpoint of one who was going, for better or for worse, to make his home in it. In this event his interest could not help being essentially practical and personal. And this may be taken to illustrate somewhat the distinction between the point of view of the sciences and that of philosophy. The details of the subject-matter of a special science concern problems and issues that we may only occasionally or never meet. It is hard to make such facts seem momentous. But the infinite canopy of the universe is, after all, the place we must *live* in and to the general order of which our lives as wholes must adjust themselves. It is unavoidable, therefore, that philosophy should always have a personal aspect or bearing, because it deals with the very setting of life. The student who enters upon the study of it soon finds that the problem of the

universe at large is a distressingly intimate affair; it becomes a gigantic frame about his finite destiny. His cosmos is the place in which he must get to feel at home and find a task. A man's efforts at such orientation and allignment constitute his philosophy, and success in these efforts would not be a bad name for edification.

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REVIEWS AND ABSTRACTS OF LITERATURE

An Introduction to Social Psychology. CHARLES A. ELLWOOD. New York: D. Appleton and Company, 1917. Pp. 343.

It is less than a decade ago that Professor Ross published his *Social Psychology,* the pioneer in this new field of the social sciences. Yet already a number of suggestive works on this subject have appeared, among which the thoughtful study of McDougall is perhaps best known. Latest in time is Professor Ellwood's interesting book which he characterizes as in general "a simplification and systematization of the theories presented" in the author's *Sociology in its Psychological Aspects,* published in 1912. At the outset the general point of view of the book is stated as follows: "The explanation of social phenomena is to be sought in the underlying traits and dispositions of the individual, in the influences of the environment which act upon his plastic nature, and in the resultant aims and standards which he develops." Obvious as this fact may appear to some readers, it is well to remember that the position of psychology as the foundation of all the social sciences has, as yet, received little more than theoretical recognition. Practically psychology is ignored by a majority of the writers on social and economic questions; or, at best it receives slight consideration and that of a popular sort.

The psychological position of Professor Ellwood is in hearty accord with the functional psychology of the present day. This means, of course, that he starts with the behavior of individuals and regards instinct, feeling, and intelligence as instruments in the control of behavior to the end of successful adaptation. Such a view of human nature does not readily lend itself to the theory that the individual is a passive and inert victim of environmental conditions. On the contrary, the author seeks to refute that "easy-going philosophy" with the biologic fact that all organisms are self-active and katabolic. Hence the external stimulus does not compel action, but rather conditions and gives opportunity for it. This view receives interesting application in the author's criticism of economic deter-

minism as a theory of social progress. Obviously, such a doctrine reduces the psychological factors to more reflexes. It leaves out of account, as Professor Ellwood makes plain, the organizing and creative tendencies of social life in its higher phases. "Ideas are determined by the environment, according to this theory, and not, as we have seen, by both original human nature and the environment." Moreover, it is the interrelations of individuals in such primary groups as the family and the neighborhood which furnish the chief source of the standards and ideals of peoples. Now such groups are found everywhere in all stages of industrial development. Together with human nature itself they determine the controlling ideas and aims of social life vastly more than does the economic system. If the adherents of economic determinism were correct, the material civilization of a people would always develop in advance of its language, its art, its science or its moral and religious systems. Yet history shows many instances of change in the artistic, moral, or religious ideas of nations in advance of their systems of industry.

Professor Ellwood accords due recognition to instincts as the original motor tendencies of human nature and, therefore, "the primary forces of society." But he deprecates any conception of instincts as definitely fixed reactions and emphasizes their vagueness and extreme modifiability. Just as instincts are the racially persistent activities that come to individuals through heredity, so habits are the modifications of these activities due to environmental influences and to experience. Human instincts furnish the raw material of social institutions which essentially are social habits. Upon the basis of these two factors civilization is built and made continuous and stable.

Starting his interpretation of social life with a study of social activities or with the group "doing something," the author finds the source of social unity in the coordination of the activities of the group members. But if individuals are to carry on common activities through interstimulation and response, they must maintain certain psychical attitudes toward each other. Common feelings, ideas, beliefs, and valuations must develop as controls of the group activities. "Human social groups especially are characterized by the large feeling and ideational elements which enter into their life." And these subjective accompaniments of social coordinations are the supremely significant factors which must be understood if social life is to be successfully controlled. As man climbs from the perceptual world in which he began to the ideational world in which he exists to-day, he accumulates a rich store of tradition which goes far to maintain social continuity. With the progress of social evolu-

tion, however, social changes become both more rapid and more complex; and out of these changes social consciousness is born. These social mutations commonly originate in some change in the environment or in the group organization which makes old social customs unworkable or ill-adjusted. Upon these badly working social habits attention is fixed and by them thought is challenged. Only in the degree that such social self-consciousness is developed and is furthered by public discussion, can human societies "gain collective control over the conditions of their existence." For only as individuals become conscious of grave social maladjustments will they employ their higher intellectual capacities in the task of securing better adaptation to social conditions. The intellect and its ideas, then, are the instruments by which social progress can be controlled and even rationally planned in advance. Hence it is of the utmost importance that the intellectual life of a group "should be organized, and socially guided and controlled."

At this point Professor Ellwood raises the interesting question whether a high degree of rationality is consistent with the best development of the social life. Certainly the Greeks were at the same time the most intellectual people of antiquity and the least gifted with practical social genius. Professor Ellwood answers the question by declaring that "the antagonism between social and intellectual development is more apparent than real." Probably the opposition arises in large measure from the fact that the intellect is stimulated chiefly by conditions of maladjustment and change and these social changes are often disturbing, for a time at least, to harmonious and stable social relations. Then, too, it must be remembered that intellectual activity may never have been socialized, but, on the contrary, may have developed in an exceedingly narrow and relatively useless sphere. However, the author very justly claims that the "existence of unsocialized thinking no more implies an unsocial character of thought processes, than the existence of unsocialized desire."

In the chapter on "Social Change under Abnormal Conditions" Professor Ellwood takes issue with the doctrine of social evolution by mutation or revolutionary change, a doctrine that he believes to be growing in popularity. The argument for catastrophic social methods on the ground of their analogy to De Vries's theory of mutation is not sound. Social evolution does not follow organic evolution either in nature or in method. While it can not be denied that social progress has often come, in the past, from revolutionary methods, yet the social ruin and disaster that have resulted from such methods make it incumbent upon students of human history to point out another and a better road to progress. In a flexible society where

ample room is provided for discussion in the interests of enlightened public opinion and where intelligent leadership is welcomed, revolutions will never be necessary.

Professor Ellwood's book is characterized throughout by a reasoned optimism and a broad and inspiring outlook. While refusing to regard man as the puppet of circumstance, the author yet grants that every aspect of consciousness is socially conditioned. He looks for a wider extension and interdependence of human activities as the sole condition under which thought may become socialized, beyond the limits of nationality, and "a humanity of wide sympathy and good will" may be developed. When reason and good will are made to work together for the advancement of the interests of all mankind then wars will cease. The extension of such rationality and good will among peoples is the great task of every social institution, but in a special sense this responsibility devolves upon education.

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The Order of Nature. LAWRENCE J. HENDERSON. Cambridge, Mass.: Harvard University Press. 1917. Pp. v + 234.

The scholarly scientist is sure to write a book full of facts interesting to the philosopher. This Professor Henderson has already done in his *Fitness of the Environment.* The scientist is not so sure to give his facts adequate philosophic interpretation. *The Fitness of the Environment* was marred by a most naïve teleology and this new book comes apparently to give teleology a deeper and more acceptable interpretation. But I can not believe that its author has been wholly successful in this.

About one third of the book is taken up with a history of teleological thinking as it appears with Aristotle and in the seventeenth and eighteenth centuries. In this the author has acquitted himself well and shows a most commendable grasp of the history of philosophy. There follow studies of biology, nature, evolution, the factors on which life depends, and the problem of teleology proper. The conclusion is that "the contrast of mechanism with teleology is the very foundation of the order of nature, which must ever be regarded from two complementary points of view, as a vast assemblage of changing systems, and as an harmonious unity of changeless laws and qualities working together in the process of evolution" (p. 209).

The evidence for this conclusion seems to be: "First, the characteristics of systems (phases. components, activities, *etc.*) are universal conditions of all phenomena, except the infra-molecular. They do not depend upon the peculiarities of the numerous varieties of matter, and they are changeless.

"Secondly, the properties of matter are so distributed among the elements that three elements possess a unique ensemble of unique characteristics,—maxima, minima, and other singular properties. But this pattern in the properties of matter is also a universal condition of phenomena. It seems to be quite unmodified by the characteristics of systems, in that, like such characteristics, it is changeless" (pp. 209–10).

The treatment of concepts in reaching this analysis, however, seems to the reviewer to be a curiously tangled mixture of idealism and scholastic realism. We are told (p. 200) that the laws of nature are "the product of the human reason and are not conceived by science to have objective existence in nature," yet (p. 119) the "process of the evolution of our world, however manifold in its details, is at least governed and directed by the general laws of physical science." Again (p. 186), "Life must manifest itself in and through mechanism," so life is evidently an entity. Also (p. 187, quoted from the *Fitness of the Environment*) we are told "there is, in truth, not one chance in countless millions of millions that the many unique properties of carbon, hydrogen, and oxygen, and especially of their stable compounds water and carbonic acid, which chiefly make up the atmosphere of a new planet, should simultaneously occur in the three elements otherwise than through the operation of a natural law which somehow holds them together." Are these properties, then, scholastic "reals" that might be accused of mixing by chance?

I think that Professor Henderson's difficulties arise from his theory of knowledge rather than from his facts. If one starts from such a point of view as is expressed concerning analysis and synthesis in Professor Dewey's *How We Think* or the *Experimental Logic* the problems of this book largely disappear. But after all our author's concept of teleology is very attenuated, for teleology is characterized (p. 204) as "the vaguest possible term which can be imagined, from which all implication of design or purpose has been completely eliminated." Yet this attenuation accents the problem, for if a whole is compounded of independent parts, there must always be a problem of how those parts came to be arranged as they are. If there is a world, on the alternate hypothesis, and our knowledge consists in selections of significant features of it, because of their significance, we may be moved to wonder that it is so complex, but the question "why" is meaningless.

This question and its answer are alike excluded by any theory of knowledge which sees knowing as a phase of behavior, a condition of a more or less complex organism in relation to its environment. "Why," taken teleologically, has meaning only in the responses of the conscious organism where ideas, as anticipations, become motives

and determine them. It is not the universe, but only certain organisms that have a structure making such ideal anticipations possible. Man's present action may be guided by what may take place tomorrow, but the lilies of the field are innocent of such subtleties. Man is, then, teleologically disposed because, in the lawful behavior of the cosmos, he has attained a certain structure with its consequent behavior capacities, and the lilies are colored for the same reason. Yet there is a great difference between ends attained through teleological capacity and ends realized without it, even though the latter may turn out the more advantageous. It is one thing to be hungry and to satisfy that hunger from a carefully selected bill of fare, another to be born beautiful and take the consequences.

Auguste Comte once said that "to be surprised that a tree is adapted to conditions, as it is, is to be surprised that a tree exists," and this is the sort of wonder that fills Professor Henderson. Our universe is rich in such sources of wonder, and science can do little to dispel them. We may resolve complex phenomena into concatenations of more simple ones and, when we find correlations between the properties of the simpler and the more complex, we say we have the laws on which the complex depends. When we look at things closely, we may find uniformities amongst the analytic components of wholes of which they are the harmonious consequents, but that does not give us the right to assume that the components are there for the sake of the whole, but merely to predict that if the components had not been there, the whole would not have been. Without the properties of the three elements, C, H, and O, there would undoubtedly not be the sort of living organisms we know. But why is this teleology?

Some men, however, can not steel their minds against the question "why," put to the cosmos. If asked, more coherent than the anomalous teleology of our author, is the Kantians' effort to construe the world in moral terms. But the non-romantic thinker, even if Hegelian knowledge of the whole is assumed as given, realizes that he has therefore no sort of understanding, but can only stand at gaze and murmur "Lo, such is the world."

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JOURNALS AND NEW BOOKS

REVUE DE METAPHYSIQUE ET DE MORALE. March, 1917. *Les conceptions de l'histoire de la philosophie* (pp. 135–147): V. DELBOS. – An examination of the ideas underlying histories of philosophy since the *Dictionary* of Bayle as preliminary to obtaining

a precise idea of the meaning of history of philosophy. *Sur quelques questions soulevées par l'infini mathématique* (pp. 149–164): F. ENRIQUES. – The paradoxes of the infinite condemn the very principle of the new realism. *La symétrie des phénomènes physiques et le principe de raison suffisante* (pp. 165–198): L. ROUGIER. – "The principle of sufficient reason . . . is susceptible of remarkable scientific applications. For this end, it must lose some of its generality to gain in precision by a reduction to a rational utilization of the concept of symmetry." *Notes de critique scientifique. Encore la dégradation de l'énergie:* F. LE DANTIC. *Études critiques. La "philosophie grecque" de M. J. Burnet:* L. ROBIN. *Questions pratiques. Le sens de l'union sacrée:* G. S. *Nécrologie.*

Gemelli, Agostino. Sull'Applicazione dei Methodi Psico-Fisici all'Esame dei Candidati all'Aviazione Militare. Milano. 1917. Pp. 38.

Kitch, Ethel May. The Origin of Subjectivity in Hindu Thought. Philosophic Studies issued under the direction of the department of philosophy of the University of Chicago, Number 7. Chicago: University of Chicago Press. 1917. Pp. 82. 50 cents.

Philosophical Essays in Honor of James Edwin Creighton. By former Students in the Sage School of Philosophy of Cornell University. New York: The Macmillan Company. 1917. Pp. xii + 356. $2.00.

NOTES AND NEWS

ALL those interested in collections of American opinions on the war and on what to do about it should note the July number of *The Annals of the American Academy of Political Science* (Volume LXXII., Whole Number 161) and the July number of *The American Journal of Sociology* (Volume XXIII., Number 1). The number of *The Annals* is devoted to America's Relation to the World Conflict, and contains forty articles, by as many different contributors, on many phases of the present international situation. The number of *The American Journal of Sociology* contains a symposium on "What May Sociologists do toward Solving the Problems of the Present War Situation"? To this question there were sixty replies, of which forty in the form of brief papers are printed.

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PSYCHOLOGY AND SCIENTIFIC METHODS

PSYCHOPHYSICAL PARALLELISM: A PSYCHOLOGICAL EPISODE IN HISTORY

IN the history of philosophy, a history that is, of course, inseparable from that of civilization, the change from dualism as a metaphysics, as a doctrine of two independently existing worlds, the world of spirit and the world of matter, to dualism as only an hypothesis or method, a working standpoint, or say to an epistemological dualism, has, I think, peculiar interest at this time. It is interesting both to psychologists, who in what has been known as psychophysical parallelism long "enjoyed" the hypothesis, and to students of philosophy and the history of civilization, because we seem now to be near to abandoning even the epistemological dualism and in order to understand the recent event, whether as affecting thought or life, we need to recall and examine what has gone before. The medieval dualism, which was metaphysical, the modern parallelism, which has been primarily epistemological, and the recent pragmatic philosophies tell a story, as stories are told in philosophical "isms," that, when understood, has a truly dramatic interest. It is, however, a story that psychology has also found in personal experience, in the individual's consciousness and, while analogies of the development of experience in individual consciousness to centuries-long movements of history must always have their dangers, I think that before we consider the great history of those "isms," medieval dualism, modern parallelism and recent pragmatism, we may with considerable profit take up the story as psychology might tell it.

So, to be more or less psychological for a few paragraphs, we are wont nowadays to look upon words like problem, inquiry, experiment, as indicating a basal character of experience, as descriptive of the impulse or interest underlying all consciousness. In every problem or experiment, furthermore, there is plainly, to speak grammatically, a subject seeking a predicate. Thus: What is that? In this question something, referred to as "that," the grammatical subject, seeks a predicate, as is indicated by the interrogative, "What?" But, so much granted, it is evident that every question,

problem or experiment, simply by its association or expected association of something with some meaning, really involves the matter-spirit, body-mind, real-ideal, or object-subject distinction. One can not ask a question or for that matter even declare anything—a declaration, however positive, being at most only a supposition to be maintained as it were on trial and against recognized opposition and difference—without using and setting, without implying, what in the large way of general philosophy we know as dualism. So is dualism a principle or function of all experience or at least of all questioning or experimenting, and it must have as many applications or structural expressions as there are questions. The great questions, cosmological, psychological, or theological: What is the world? What am I? or What is God?; epistemological, ethical, or teleological; What do I or can I know? What ought I to do? or What may I finally hope for? have always involved their special dualisms, as is shown historically by the conflicting answers, as perennial as the questions themselves, idealistic, on the one hand, and materialistic, on the other, and psychologically by what I venture to believe is true to the personal experience of every one. Does any one, or could any one, put any of those questions without involving the distinction between thing and meaning, fact and value? Materialism and idealism, empiricism and intuitionism, hedonism and rigorism, naturalism or humanism and theism, the first term in each pair referring to the world of things or facts, the second to the world of meanings or values, are more than just "isms" of a sort of general, impersonal history, than just general tendencies or atmospheres of the times, however interesting they are as such incidents of history; they are also actual factors, conflicts and all, of every individual consciousness. Again, they are not merely the affairs of those big questions, but are also, however minutely or inconsequently, involved in every little problem or experiment of any one's life. When one fully appreciates this, finding in dualism and its whole retinue very general psychological functions as well as historical "isms," which mark but social and institutional forms of such functions one finds the entire meaning of them all undergoing a radical change from what it has been and perhaps still is in many minds.

But, in addition to each and every question or experiment involving dualism, this is to be said: In each, as its solution develops, experience moves through stages that, as regards the value attached to the dualism, are quite analogous to dualism as metaphysical, dualism as only epistemological, as only a working standpoint for knowledge, and dualism as finally resolved in some action or at least in some pragmatic attitude. Thus, that in the beginning a question, just because it is a question, implies a real divorce of the thing in-

quired about and its meaning or value must be quite obvious. Moreover the two, thing and meaning, just by virtue of their divorce will appear as two existences, being equally real, if the question itself is real, but different in kind and substance. The difference in substance is almost indicated—with apology for any appearance of flippancy on my part—in the colloquial form of question: What in Heaven's name is that? where, as suggested by the emphatic phrase, the inquiry must be very dark and groping indeed and so very dualistic, thing and meaning being as far apart as Heaven and earth and as unlike. In fine, any question—the darker and more groping the better—is a dualism. It is, too, to use the cumbersome word, a metaphysical dualism, in this sense that the inquirer is confronted with a real situation, the essence and being of which lie in the sharp separation of something and its meaning. What—under the sun!—is that thing?

Putting a question, however, is really facing the dual situation which the question implies, and a question squarely put, the situation fairly faced, has advanced a step, an important step, too, although only a first step, towards its solution. With the putting, the inquirer enters upon a process which involves finding himself, such finding constituting the meaning sought—in the thing inquired about or relating all the specific details of the thing, as they are analyzed out, to answering factors discovered in his own nature; and, all in good time, a part-for-part correspondence is worked out between the object in question and the inquiring subject. So, for example, I might be inquisitively interested in a city to which I have come for the first time, and, if duly intelligent and attentive, gradually overcome the metaphysical dualism—much more popularly called embarrassment—that first strikes me, as I get off my train. Gradually, I say, I might overcome my first dualism by finding myself, my various capacities and interests, in the different phases of the city's life or, conversely, the city in the different possibilities of my nature. So, again, as some runner is running across country, the dualism of his surprise, when dashing through a thicket he discovers a difficult stream, is gradually overcome. Analyzing at once the presented circumstances and his own halted or inhibited self, he finally realizes what I now venture to call a condition of psychophysical parallelism between himself, the world of meanings, and the environment, the world of things. The more, too, this parallelism is accomplished, the less metaphysical and the more merely epistemological is the dualism of it, meaning and thing, self and environment, becoming only two aspects of one reality and being no longer—save in memory—different and exclusive. Looking before leaping, then, a phrase that might be said at least figuratively to

characterize all serious inquiry, is hardly as simple a matter as commonly supposed. Does it not always involve—could anything be more appalling?—a change from a metaphysical dualism to an epistemological dualism, from some distinction of thing and meaning as a confronted problem to the same distinction, its difference virtually overcome and the animus of it gone, as only formal, as only a way of holding the results of the two correspondent analyses? Can you not imagine the runner, his observations all made, every pertinent detail of the stream and its surroundings carefully related at last to some sensitively felt power of action in himself, as he hesitates before the final action, that is to get him across? Surely his first dualism or embarrassment is become only the ghost of its former self, being now metaphysically quite innocent. The divorce of meaning and thing, once so real and immediately existent, is now only apparent and mediate.

But this second stage, the epistemological that follows the metaphysical dualism in the answering of a question or solution of a problem, is, of course, not final. Sooner or later the action, which has been preparing, must ensue. Let the action come, however, and the dualism changes again; being lost altogether, if the action follow without any further question or any need at all of watchful adaptations, but becoming "functional" and "moving," in so far as constant watching and alertness are necessary or as subsequently some new problem has to be solved. Such a functional and moving dualism is very different from the structural dualism which had preceded and had implied fixity and finality in the terms. In a functional dualism the terms, thing and meaning, environment and self, change in their contents with the progress of the action, making the dualism, as was suggested, "moving," and, to bring my little excursion into the world of psychology to a close, in the three sorts of dualism, which have now been pointed out, we have the story of a question and its answer, a problem and its solution, fully told. The telling has hardly been in the technical language of psychology, in part because with the present purpose I had to cumber my narrative with philosophical terms, but I must trust that I have said nothing that a psychologist can not recognize.

Now our psychological story is the story also of Christendom: the medieval dualism, the modern psychophysical parallelism, and the present pragmatism, for which dualism can be only functional. Let us, then, turn to the story in this larger writing. Although leaving the ordinary field of psychology, we shall not be leaving that of human experience.

As the ancient civilizations fell, the Roman being the last of them to go, human nature, the human spirit, found itself at last con-

fronted with the sharpest kind of a divorce of things and meaning, world and value. So sharp did it become that men finally retired personally "into themselves" and institutionally into that instrument of separation from the world, the Church, St. Augustine's "City of God." In the Church the inner selves, the souls of men, found independence. But what an empty, formal, meaningless independence it was. No actual advantage, not even life nor liberty of person nor the safe enjoyment of property was involved in it. Moreover, exalting as it did, except for what tradition and memory might conserve from the past, only an abstract, other-worldly spirituality, it was no check at all upon the reign of might. But force and primitive passion could be controlled only in kind. The time, then, was one of souls and brutes, of unearthly spirituality and might, the Bishop of Rome with his Church and the barbarians that overran Italy. Such conditions were, of course, quite consistent and logical. Might and an abstract spirituality may at first seem a strange partnership, but history always has her humors, like politics making strange fellowships; and, as to that partnership, might and unworldliness were, after all, true counterparts of each other, as is shown by the fact that for centuries they were the two mutually supporting powers or sanctions behind the thrones of popes and emperors or kings. Study your history and you will find that, whenever might has made right, God—ruling, it is true, very much from on high—has also been claimed as might's partner. But, to come now to the point with which we are specially concerned, in that partnership, that very meeting of extremes, lay a problem, the great question of Christian civilization and its long history. With tradition and memory still recalling what had been and so suggesting what might be, what did this new world really mean? How could man, the progress of his life given such pause, his spirit set so aloof, recover the freedom of action he seemed to have lost and proceed once more on his way?

That Christendom was making just such inquiry is shown by its attitudes of faith and prayer, so much more tense and genuine than perhaps anything since known in history; by its sense of dependence and its construction of an other-worldly institution, the Church, from material supplied by this world; and by its expectation and its millennial prophecies. These things all show real and genuine inquiry and they show also how in the mere putting of the question, aided as this most certainly was by those memories from antiquity as well as by the prayers and prophecies and the institutional presentation of the spiritual world, there at once set in a movement to the question's answer. Checked in its old ways of living, deprived of its long-used instruments of law and order, the human spirit entered upon a long period of external observation and experiment on the one hand and

close and often cloistered self-analysis and self-discovery on the other; not unlike the observation and the self-study which we were able to remark in the only simpler case of the runner at the stream's bank. Nor do I need now to say that in the situation as it has been described we have the source of the medieval dualism. Taken as representing perhaps most characteristically the time of St. Augustine, although some might insist on an earlier time, that dualism was in its beginning but the setting of the great problem. Calling it a metaphysical dualism, we can mean only that the divorce of world and value, body and soul, was then very real indeed. No problem can ever be fairly stated without its "given this" and very decidedly that divorce was "given."

The problem, then, once set, the dualism taken as given, solution began. It would make too long a story to tell in detail the progress of the solution, narrating how gradually the human spirit and the natural world came once more to find themselves in each other. Yet I may touch on some of the marks of the progress. Christian doctrine made an important contribution in its rather early pronouncement of the equality, the equal substantiality, of the Son, representing God, the spiritual head of the Trinity, in human earthly form, with the heavenly Father (fourth century) or of the procedure of the Holy Spirit from the Son as well as from the Father (sixth century). Christian worship, coming to include the saints and the Virgin as well as the Father and the Son and to be as happily this-worldly and "idolatrous" in other ways, bowing reverently before images, for example, that were but forerunners of those great naturalizations of Christianity's spiritual values, the great works of Christian art, made its contribution. The rise of the state, first in the ninth century as the Holy Roman Empire and then as the independent nation with its own church in the sixteenth century, made its contribution; such a development being supported by a doctrine, in which Dante had some part, that very much as the Son was of equal substance with the Father so earthly rulers were as divinely authorized as spiritual rulers, God creating emperors and kings as well as popes. And, to cut this recital short, at the time, finally, when the medieval church doctrinally and institutionally had reached the very height of its organization, becoming the accepted machinery of all human activities so truly and fully that her officers were near to being only figureheads and often became—to put the fact mildly—irresponsible perhaps for being so unnecessary, at such a time Galileo and others revealed the possibility of the natural physical world being also a mechanism capable not exactly of doctrinal, logical, or legalistic, but still of mathematical guaranty. What a splendid outcome! What a splendid tribute to the hope and effort,

the prayers and the organization of the church was this: the natural world a great rational order, a great comprehensive mechanism; the church's régime of life and thought, of formal ritual and Latin, of marvelous institutional control, only finding justification and enlargement in the mechanical order and rationality of nature; her legalism and theologism only flowing out into the almost unbounded seas of modern reason! Such an outcome needed only that some one should complete the equation of the spiritual with the natural by discovering God in nature. But Giordano Bruno made just this discovery and others, some emotionally and some intellectually, soon came to the same view. As the church became organized, you see, nature was found lawful; and, nature thus showing reason, God's residence on earth was no longer confined to the church.

Small wonder that the medieval dualism, metaphysical and dogmatically theological, gave way and that psychophysical parallelism took its place. Life and its value, the world and its meaning might still appear different and apart, being still accounted as two worlds, but no longer could they be two opposed and independently existing substances. Was not their parallelism, and so their virtual unity, a realized fact? Church and state, their institutional representatives, if not in name and color, at least in form or shape, were about as like as the proverbial two peas. I do not know how many of my readers are accustomed to take the philosopher's "isms," as I am now asking that they be taken, as neither more nor less than reports of events in history, but I do know that too many regard philosophy as so abstract and generally impertinent to anything actual or interesting in human life that the philosophers seem to them least of all men to merit the term of reporters even as a term of abuse. Yet at least the psychologists, nowadays quite in the habit of associating thought with actual processes and events, may be counted on to be not as other men are in this matter. Philosophers, then, really are reporters; their philosophies reflect actual achievement, being as it were cross-sections at different points and angles in the course of history; in the form, however, of generalizations from actual experiences, of "isms," tendencies, or characteristic attitudes, rather than being certain individuals' immediate specific experiences. The psychologist's study of experience is formally different from the philosopher's or historian's, but, after all, only as individual and genus are different. This difference aside, however, when in the sixteenth and seventeenth centuries certain philosophers, Descartes and others, formulated from several points of view the philosophy of parallelism they were only registering or reporting something that had become actual and factual enough in the life of Christendom to warrant publication, and the important news, when published, came to give great stimu-

lus to detailed elaboration of the general fact so reported, as any one knowing the history of the seventeenth to nineteenth centuries can fully appreciate. The old controversies went on, apparently; spirit and matter still had their partisan advocates; but with the interest finally changed from that of determining the substance of things to that of determining the way of knowing things. Intuitionism, advocating introspection and ratiocination, and empiricism, advocating observation and experiment, were the lineal descendants of those medieval and metaphysical philosophies, realism, champion of the primary reality of the spiritual world of meanings and values, and nominalism, champion of the primary reality of the world of individual things, and the modern antagonists, for whom the knowledge of things was so much more important than the substance of things, only divided the labor of guiding men in their working out in its details the reported harmony of the spiritual and the material, of the inner values and the outer facts. For about three centuries, period of the great modern discoveries, which have been equally dependent on observation and reflection, on induction and deduction, on actual experiment and logic or mathematics, the human spirit has been busy working out the psychophysical parallelism first discovered in the seventeenth century, gradually deepening its understanding of itself, extending its knowledge of the world and ever enhancing the possibilities for action always latent, as so simply shown in the case of the runner's looking before leaping, in a psychophysical parallelism. When a civilization spends centuries before leaping, before making a great transition, on the one hand, examining itself and discovering and organizing all its minutest parts and powers, and, on the other hand, precisely and minutely studying the surrounding world, the transition so preparing must indeed be fraught with great consequences.

So, what after the parallelism? To what end the centuries of science, of cooperative introspection and observation, of human nature's most intimately associated self-analysis and measurement of the outer world? The formal dualism, on the whole, still remains, constituting, perhaps, as some at least might think, a still needed check, an influence against a too hasty leap. But in the light of events one may well wonder if positive and effective action, making kinetic what has been so long latent, should be longer delayed. Certainly, if the philosophical "isms" of the day, the pragmatic ideas and attitudes, for which dualism has quite lost its structural and metaphysical fixity, are any report of present tendencies and conditions, even the epistemological dualism must yield finally and give place to important progressive action. In fact, one may well ask, recognizing the great war and its possibilities, if the action so long preparing may not be already under way.

What has caused the great war? You would laugh—with me—if I should say that an epistemological psychophysical parallelism, although that might be blamed for most anything, had been the cause or at least a cause. The newspapers and the magazines, not to mention the grocery-store statesmen, have contributed many explanations and thereby enhanced greatly our enjoyment of life, and now a philosopher, outdoing them all with his fantastic suggestion, would only provide more gaiety for men and nations. And yet that epistemological psychophysical parallelism has hardly been innocent. What have we found this hyphenated "ism" to mean but at least a formal separation of meaning and thing, the values of life and the real activities of life? This being its meaning, you know as well as I that there can not, after all, be the form of anything without some survival of the substance. I have always suspected, for example, that there really was some Cheshire cat behind that historic grin. No epistemology can escape altogether the metaphysics that has preceded and made it possible. In spite, then, of the centuries and all that they have brought, our Christian civilization still suffers from a fixed and structural dualism, even from the dualism of spirit and matter with which the great problem of Christendom was first set in those days of St. Augustine, and, I now add, suffering needlessly. Yet so much suffering seems needless. Why suffer from the conditions of a problem when you have, at least sufficiently to warrant some confidence of adventure and experiment, the solution at last worked out? Why stand longer on the bank? Why let mere inertia give pause to at last possible action? Surely it is Christendom's failure, when the opportunity had developed, to bring human values and actual life together that made the war possible, perhaps I ought to say that made the war necessary. Inertia is often such a hard thing to overcome. Without the war the great issue, calling for progressive action, for creative conduct on the part of civilization, for movement of the ideal in the real, in place of their long-standing *vis-à-vis,* might never have been forced. If so, the war will have been worth while, hard as it is to consent to the fearful cost.

You do not follow me? Then, once more, observe how, thanks to the inertia or the conservatism pretty much the Christian world over, in the institutional life of the peoples the divorce of life's human values from life's effective activities has persisted quite beyond need or reason, most conspicuously, I suppose, in Germany, but also in some noticeable and inhibiting degree in all countries. Moral sentiment and spirituality have been ecclesiastical, but moral effectiveness has been largely unofficial and non-ecclesiastical. Culture and general intelligence have been cloistered and academic, but on the whole vocational and professional skill have

been non-academic or at least not respectably academic. Patriotism has been narrowly and traditionally nationalistic, often even jingoistic, but productive national life in every phase of its activity from art and science even to athletics has been internationalistic. In short, generally, life's values have been kept aloof and institutional and have been in so far other-worldly and impractical, while life's real work, hard and "practical" and in these days amazingly productive, has been extra-mural and so unspiritualized. Wherefore there simply had to be war, always an easy consequence of such divorce; or progress, possible through a vital union; or both war and progress, the former forcing the issue of the latter.

Have you now caught my meaning? Have I, too, told the whole story of the medieval metaphysical dualism, the modern epistemological psychophysical parallelism and the present pragmatism clearly? Psychophysical parallelism has had the title rôle, I suppose, because it particularly seems to have had the interest of the psychologists. It has, also, been more or less of a rogue in recent times. But may I not hope that, among other desired possibilities, I have touched with new psychological interest some of the other "isms" of philosophy besides parallelism and also that to some profit I have suggested how a philosopher's story may have its value alike to history and to morals? What our day needs perhaps more than anything else is, if I may use the word culture to cover all positive human values, not culture and efficiency, but an effective culture.

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PROFESSOR URBAN'S VALUE-THEORY

THE following critical notes refer to the articles[1] published recently in this JOURNAL by Professor Wilbur M. Urban.

1. *Value not an Objective.*—Professor Urban maintains in these articles the thesis that value is an "objective." This thesis is the most important new thing contained in the articles. I do not say it is the most important thing contained in them, for that seems to me to be the sharp distinction drawn between "being," on the one side, and "validity," on the other, together with the consequence that value does not have being of any kind, but has validity. But this distinction is not new; it originates with, or at least has been mainly developed by, Heinrich Rickert. It is an idea with which I can

[1] "Value and Existence," this JOURNAL, Vol. XIII., pp. 449–65; "Knowledge of Value and the Value-Judgment," this JOURNAL, Vol. XIII., pp. 673–87; "Ontological Problems of Value," this JOURNAL, Vol. XIV., pp. 309–27.

readily agree; but it is, as the reader of these notes will see, about the only important thing I can agree with which is contained in these articles. The thesis that value is an "objective," which is the chief novelty here brought forward, seems to me to be entirely fallacious.

The word "objective" means little to one unfamiliar with the writings of Meinong. In the writings of this thinker and his followers a distinction is drawn between "objects" and "objectives" (both of them being called *Gegenstände*). If we approach this distinction from the angle of judgment, we may explain it by saying that an "objective" is what we apprehend by means of a judgment, whereas an "object," though we may in some sense apprehend it in a judgment, is never the whole of what we thereby apprehend. Thus, if we judge "*A* exists," we apprehend in the act of judgment the object *A*, and also the objective, "that *A* exists."[2] An objective may then be characterized sufficiently as the whole of what we apprehend by means of a judgment. Professor Urban has adopted this phraseology and this conception, at least in so far as the word "objective" means simply the total object of judgment or an objective proposition. In what follows I have no desire to call in question the doctrine of the objective, but rather to point out that value is not the sort of thing an objective is defined to be.

Professor Urban writes: "Value is not a 'what' at all, either quality or relation. It is a 'that'."[3] Again he writes: "Value does not *presuppose* an objective, but *is* an objective."[4] And of course value is not any objective whatever, but some particular sort of objective. Professor Urban treats value throughout these articles as being "the proposition [*i. e.*, objective] that an object ought to be on its own account."[5] But one may inquire, what value? Value in general is certainly not the proposition that any particular object one pleases ought to be on its own account. On this point Professor Urban is not explicit. But to avoid the initial difficulty just indicated he would have to put his doctrine as follows: The value which is possessed by any object is the objective that the object ought to be on its own account. Let us consider the thesis as thus stated.

This thesis may easily be seen to be untenable by means of a consideration which has to do with the relation of "possession." The consideration is briefly this: A value may be possessed by an object, but an objective can not be. The value which is possessed by any object *A* is something which the object possesses. But the objective, "that *A* ought to be on its own account," is not a thing which *A*

[2] Meinong, *Ueber Annahmen*, 2d ed., pp. 42–47.
[3] This JOURNAL, Vol. XIII., p. 458.
[4] *Loc. cit.*, p. 464.
[5] *Loc. cit.*, p. 458.

possesses. This lies in the nature of an objective as such, quite apart from this particular objective. Let us consider the objective, "that *A* exists;" and let us state it, as we may, in the form, "the existence of *A*" or "*A*'s existence." It will then be seen that while in this case *A* possesses existence, *A* does not possess "*A*'s existence." And in general, according to the teaching of Meinong, an objective is not something which an object (as *A* in our paradigm) may possess, but rather something of which the object is a constituent.[6] For this purely formal reason, then, if for no other, we may say that the value which an object possesses is not to be identified with an objective or proposition about the object.

A cognate consideration may be stated as follows: Value, or even a value, is a universal, whereas an objective is not a universal. This is sufficient to show their difference.

Finally, a word which concerns Professor Urban's articles themselves and their internal consistency rather than the subject-matter in question. If Professor Urban adheres strictly to Meinong's doctrine of the objective, he contradicts himself in an important particular. Meinong holds that objectives are in their very essence forms of being, and that they may, though they need not, have the character of being facts.[7] If Professor Urban adheres to this doctrine of the objective he contradicts himself. He holds that value is an objective. And he also writes (and this I take to be his considered opinion): "Value is neither a determination of being nor a form of being."[8] Further: "Value is ultimately indefinable in the terms or categories of matter of fact—as object, or quality, or relation."[9] This, I say, is a contradiction if Professor Urban adheres strictly to Meinong's doctrine of the objective. And his language in certain passages indicates that he has not eliminated all elements of being and fact from the "value objective." Thus Professor Urban writes of value as " the fact that the object ought to be,"[10] and as "a unique relation of the object to bring and non-being."[11] If, however, these are mere *lapsus calami,* and if our author does not adhere strictly to Meinong's doctrine of the objective (as a form of being), he has rather needlessly confused matters for readers of this literature by adhering to Meinong's terminology. And further, if Professor Urban does not share Meinong's view that an objective is in its very essence a form of being, he may rightly

[6] Meinong, *Ueber Annahmen,* 2d ed., p. 47.
[7] *Op. cit.,* pp. 70–72.
[8] This JOURNAL, Vol. XIII., p. 465.
[9] *Loc. cit.,* p. 461.
[10] *Loc. cit.,* pp. 459, 685.
[11] *Loc. cit.,* pp. 463, 684, 685.

be expected to say what in his view takes the place of being in the objective, and to mark off his conception from the one for which the term "objective" was originally used. But of this important detail I find no word in these articles.

This will perhaps be sufficient, though it by no means exhausts the subject. My direct argument against Professor Urban's thesis was meant to show why value is not an objective. And it will be noted that this argument is entirely independent of whether or not "being" is the essence of the objective.

2. *Value and Obligation to be.*—Value is not an objective or proposition. This is true no matter what particular objective we choose to consider. Thus, we can not say that the value which *A* possesses is even the objective, "that *A* is valuable." But I now wish to point out that Professor Urban, in addition to being wrong in saying that value is an objective, is particularly unfortunate in the objective with which he chooses to identify it. Professor Urban, as we have already seen, identifies the value which an object possesses with the proposition or objective, that the object ought to be on its own account. Now it seems to me that the proposition "that an object ought to be" (whether or not on its own account) is fundamentally meaningless. That is, I would deny that objects ever do, or can, possess the obligation to be.

The argument here does not concern form, but rather material. From the standpoint of form there is no reason why objects should not possess the obligation to be; and there would be no objection, from this standpoint, to saying that value is "obligation to be" (noting, of course, that obligation to be is not an objective, though an object's obligation to be is an objective). But the simple fact is that objects do not possess the obligation to be. Professor Urban, anticipating this line of criticism, writes: "Kant, for instance, insisted that for objects, things, there could be no *Sollen*, for they simply *are* and have no ear for an imperative."[12] It seems to me that in this matter Kant has stated an important truth. Obligation or duty refers only to persons, *i. e.*, to self-conscious subjects. If we say that a train ought to be at a given station by a certain time, we are perhaps imputing obligation to the men who run the train, certainly not to the train itself; or we may be speaking in the sense of an uncritical animism. If we say that such and such social or economic conditions ought not exist, the only thing we can intelligently mean is that an obligation to change them rests on certain self-conscious (presumably human) beings. Obligation does not refer to mere objects. Further, it is never an obligation "to be," but to do; or at least it is an obligation to be only in so far as being is a

[12] *Loc. cit.*, p. 462.

stage in self-conscious doing. For these reasons we may say, then, not only is value not an objective, but the particular objective or proposition "that an object ought to be on its own account" (or rather the form of words used to state it) is, like the expression "virtuous triangle," fundamentally meaningless. In plainer language, there is no such thing as an object's obligation to be on its own account.

3. *The Universality of Value.*—Professor Urban holds, as being known to us *a priori,* that value, either positive or negative, is universal in its application. He writes: "To every object—in the widest sense of the word—positive or negative value must be predicated."[13] I will express no opinion as to the truth of this statement.

But if this principle is true, what Professor Urban writes in the following passage must, I believe, be untrue. He writes: "Whereas existence is the contradictory of non-existence, negative value is not the contradictory of positive value."[14] Now if every conceivable object must have either positive or negative value, it would appear that negative value and positive value divide the universe of discourse between them, and that they are contradictories. And it is, I think, plain at once that negative value is the contradictory of positive value. But I note further that Professor Urban, in saying that negative value is not the contradictory of positive value, refers to Rickert, allowing the reader (I fear) to suppose that Rickert makes a similar statement. If, however, the reader will turn to the third edition of Rickert's *Geganstand der Erkenntnis*—which, let me say, seems to me a most significant discussion of all these matters—and if he will consult the place in question, he will find a very different doctrine. Rickert here points out that value in the broad sense of the word includes both positive value (or value in the narrow sense) and negative value. And he accordingly teaches that negative value is not the contradictory of value (in the broad sense), while holding that it is, of course, the contradictory of positive value.[15]

4. *The Relativity of Value.*—Professor Urban further holds, as being known to us *a priori,* that every value is relative or comparative. He writes: "With our way of experiencing is bound up the notion that beyond the valued thing there is another thing that has another value, either more or less. . . . An isolated value is a contra-

[13] *Loc. cit.,* p. 675.

[14] *Loc. cit.,* p. 680.

[15] *Op. cit.,* p. 266. Rickert here writes: Nur der Wert im engeren Sinne steht im Gegensatz zum negativen Wert und ist dann als *positiver Wert* zu bezeichnen, der zum Sollen werden kann. Beide aber, der negative und der positive Wert, gehören in die Sphäre des Wertes nach der weiteren Bedeutung, die nicht den Gegensatz zum Unwert, sondern allein den Gegensatz zum Seienden meint.

diction in terms.''[16] This does not seem to me to be known *a priori*, and indeed it does not seem to me to be true at all. The contention is that all values are comparative. Now some values are without doubt of this character, as, for example, economic values, and in general the values with which the part of life called "practice" is concerned. But it seems to me that the values involved in such kinds of human experience as esthetic contemplation, love (in some forms), and religious (including perhaps metaphysical) feeling could not be brought under the formula that an isolated value is impossible, and that all value is comparative. I will, however, develop only one argument in detail.

The whole of reality has some value. This is certain if any real thing whatever has value, if for no other reason. But the whole of reality has nothing beyond it, and the value which it possesses is, therefore, "isolated" and non-relative. In pursuing this argument one might indeed quote Professor Urban against himself. For he has held that every conceivable object has some value, and this appears to imply that the whole of reality has a value, which would have to be isolated and absolute. Further, in the third article of this series Professor Urban holds (rightly, as it seems to me) that the term "real" itself is a value-concept.[17] But the whole of reality is real. Therefore, the whole of reality has a value, and, since nothing lies beyond the whole of reality, this value is not relative, but absolute.

5. *Value-Knowledge A Priori.*—Professor Urban holds that certain value-propositions are known to us *a priori*. He writes: "The whole question has been confused, however, by the supposition that we may know *a priori what* objects are instrinsically good, or that some are better than others, when as a matter of fact we can deduce the value of an object from its nature as little as we can its existence. . . .We have no *a priori* knowledge of the good or bad of any objects whatever.''[18] In Professor Urban's view the only *a priori* value-knowledge we can have consists of propositions *about* value, *i. e.*, propositions about the nature or essence of the value-concept or universal itself.[19] I realize that the entire subject of *a priori* knowledge, and particularly that of *a priori* value-knowledge, will seem to the minds of many readers to be one which, if we are to say anything definite about it, demands a thoroughgoing discussion. But I will here take for granted, agreeing with Professor Urban, that we have *a priori* value-knowledge; and my comment will consist in trying to show that Professor Urban limits too narrowly the scope of such knowledge.

[16] This JOURNAL, Vol. XIII., p. 677.
[17] This JOURNAL, Vol. XIV., pp. 325–26.
[18] This JOURNAL, Vol. XIII., pp. 674–75.
[19] *Loc. cit.*, p. 674.

"That an object is valuable or ought to be, I can know only by experience."[20] Now this seems to me to be true as regards particular objects, but not as regards universals. If the object in question is a particular, the value of the object, or the fact that the object possesses value, can be known only empirically, for the reason (if no other) that the particular object itself, a constituent of what is known, can be known only by experience. If, however, the object in question is a universal, the determinate nature of which is known to us independently of experience in the sense of "trying and seeing," it seems to me plausible to hold that the possession of value by such an object may be known to us *a priori* or independently of experience.[21] And so much is plain at once: it is *a priori* value-knowledge of this kind, and not *a priori* knowledge about the "value notion itself," in which the human mind, in its various attempts to discover the good or a list of goods, is practically and vitally interested.

6. *The Objectivity of Value.*—Let us understand the thesis that value is objective in the following sense: Value may attach to objects apart from any human feeling about these objects. Professor Urban, I believe, understands the thesis in this sense, and maintains it to be true.[22] Further, in his second article, Professor Urban bases the belief in objective value on the fact of our having value-knowledge. So far, the position seems to me to be essentially sound. But Professor Urban has selected, as the basis of the belief in objective value, certain value-propositions which, as it seems to me, are in part if not entirely untrue, and which, whether true or untrue, do not imply the value-objectivity in question.

The alleged knowledge on which Professor Urban bases the belief in objective value consists of the two propositions that value is universal, and that it is comparative. I am concerned here not with the truth of these propositions, but only with the inferences Professor Urban attempts to draw from them. He writes: "If, to repeat, we know apart from experiences of feeling and will that every object has some place in the world of value, and that given any two values they must necessarily stand in the relation of more and less, then valuation [*i. e.*, feeling] can not give it that place, and interest can not first create this relation."[23] But the conclusions do not follow. "Valuation can not give it that place." If "that place" means the place which a given object really has—and that is what we are concerned with in the question of value-objectivity—we may inquire, why

[20] *Loc. cit.*, p. 674.
[21] *Cf.* Russell, *Problems of Philosophy*, pp. 127–85.
[22] This JOURNAL, Vol. XIII., p. 683.
[23] This JOURNAL, Vol. XIII., p. 685.

not? since our principle says only that every conceivable object must have *some* place in the world of value. "Interest can not first create this relation." But, again, if "this relation" means the relation of more and less in which a given value really stands to other values—and that is the point in question—we may inquire, why not? since our supposed principle tells us only that every value is comparatively related, leaving undetermined the sense of this relation. The propositions here in question imply nothing (at least nothing so important as Professor Urban supposes) concerning value-objectivity.

Professor Urban is very circumspect in his treatment of objective value in his second article. He writes that he is "not overconfident of the solution here proposed." I think one can understand his lack of confidence, so long as the alleged knowledge just examined is made the basis of the belief in objective value. But in this discussion in the second article Professor Urban ignores entirely the circumstance that the thesis which he has maintained throughout, and particularly in the first article, *viz.*, that we have knowledge of propositions of the form "*A* is valuable" (or as he prefers to say, "*A* ought to be on its own account") must, if true, guarantee to us an abundance of value-objectivity. Professor Urban has maintained that the value of objects is apprehended by means of judgments, *i. e.*, that we may truly judge the value of objects and so possess genuine value-knowledge. But where there is knowledge there is objectivity. If our knowledge of the value of objects is anything like as extensive as Professor Urban considers it to be, our belief in the objectivity of value may well rest on a foundation entirely different from the one he here indicates, and one much more secure.

7. *The Value-Judgment.*—Professor Urban writes: "We have already warned against the confusion of the truth-judgment with the value-judgment."[24] What is this confusion against which the reader has been warned? The fact is, of course, the danger lies not in confusing these two things, but in treating them as though they were different. Every judgment, every belief, is a truth-judgment, in the sense that it aims to be true, and is either true or untrue. This fact seems too obvious to require emphasis, but unless it is firmly held in mind there is no point in discussing any form of judgment whatever, value-judgment or any other. To distinguish between a value-judgment and a truth-judgment is to admit that there is no such thing as a value-judgment.

Furthermore, Professor Urban seems to me to fail to grasp clearly the nature of the "content" or total object of the value-judgment. He writes that there is "a judgmental apprehension of value,"[25]

[24] *Loc. cit.*, p. 684.
[25] *Loc. cit.*, p. 673.

and, again, that "value" is "cognizable only by judgment."[26] Now it may seem a small matter to say that what is apprehended by means of a value-judgment is not "value," but "the value of a given object"; but the point is, I think, of fundamental importance. Suppose we judge that *A* is valuable. The object of our belief here is not "value," but "that *A* is valuable," or "the value of *A*." "The value of *A*" may be said to be "terms in relation," and it may be apprehended by means of belief or judgment. "Value," on the other hand, is not terms in relation; it is merely one term of the complex object, "the value of *A*." And "value" is not capable of being apprehended by means of judgment; it is, I think, apprehended by means of some form of feeling. The argument here is general, and applies to other forms of judgment besides the one in question. Thus, if we judge that *A* is blue, what we apprehend by means of this "color-judgment" is not the color blue, but the being blue of the object *A*. It is, then, important to note the difference between "value" and "an object's value," and to observe that the latter, and not the former, is what is apprehended by means of the value-judgment. Professor Urban, overlooking this difference, has failed to interpret clearly the object of the value-judgment: he treats it now as "value," now as "an object's value. And the lack of clear interpretation at this point is, I think, the source of Professor Urban's thesis that "value is an objective," which we saw before to be untenable. He has argued, I presume, that since value is apprehended by means of the value-judgment, and since by means of the value-judgment we apprehend an objective, therefore "value is an objective."

8. *Does Reality Imply Value?*—The language of this question is, on the surface at least, capable of several interpretations. (*a*) Does reality imply value, in the sense that reality itself is a form of value? (*b*) Does reality imply value, in the sense of some kind of value besides reality?

(*a*) Professor Urban answers this question affirmatively. That is, he holds that reality is a form of value, at least in the sense indicated by the word "importance." "A eulogistic, value-connotation is inseparable from the notion."[27] This seems to me to be an essentially correct position.

"Reality is a form of value." In the third article of this series Professor Urban also holds (not indeed with a very high degree of explicitness) that being, in its two aspects of existence and subsistence, is, if not a form of value, something which is derived in the last analysis from a "valid objective."[28] Being implies value,

[26] *Loc. cit.*, p. 685.
[27] This JOURNAL, Vol. XIV., p. 312.
[28] *Loc. cit.*, p. 324.

or is logically secondary to value. Now this position may be capable of being justified, but it is difficult to justify, and it is certainly more difficult to justify than the position with regard to reality. Of the two conceptions, reality and being, the latter is the more difficult to treat as a value-determination, or, more strictly put, being is precisely that part of reality which makes it difficult to treat reality as a value-determination. In any case, Professor Urban does not here bring forward the demonstration of the thesis that "being implies value." He refers to Rickert and Lask, who maintain the position that value is prior to being, or that being implies logical value, but does not, so far as I see, reproduce the essentials of their argumentation. And I can not think that he has carried their argument further. Professor Urban seems indeed to be of this opinion. He writes that he finds a circular argument in Rickert's "imperativism," but thinks that this difficulty disappears "if the conception of value as an 'objective' is maintained."[29] But we have already examined this conception and have found it to be fallacious. No argument to prove that "being implies value" can be cogent which rests on the conception that value is an objective.

(*b*) A second question may be put as follows: does reality imply value, in the sense of some form of value other than reality? Professor Urban answers this question in the negative. That is, he rejects the "romantic" view that "objects of our likings possess as much of satisfactoriness—which we identify with value—as they possess of reality and trueness."[30]

But it seems to me that, on his own principles, Professor Urban does rather less than justice to this view. He argues against it by citing the statement, "things need to be good or beautiful or spiritual to exist at all," as being plainly untenable language.[31] There is, indeed, no doubt that bare existence, whether mental or physical, does not imply satisfactoriness. But that is hardly the point. The question is whether reality implies such satisfactoriness. Professor Urban here ignores the distinction which he has already admitted between reality (as having "a value connotation") and mere existence.

And can Professor Urban consistently hold the view that reality is a value-concept, and reject the view that "the universe will satisfy us," *i. e.*, that ultimate reality is satisfactory? I offer no answer to this question. But this may be said: Professor Urban's thought is consistent at this point only so long as he holds that reality, although

[29] *Loc. cit.*, p. 324.

[30] Bosanquet, *Principle of Individuality and Value*, p. 317.

[31] This JOURNAL, Vol. XIV., p. 326.

a value, is only one among several species of value, and does not imply any other species but itself. This conception may be questioned. It may be asked: Is reality indeed one among several coordinate species of value, which implies no other species? or is it the value *par excellence,* which implies, by being present in, all species of value? And it will be noted that if the latter alternative is accepted, the two topics which we treated as (*a*) and (*b*) ultimately coincide.

9. *Does Value Imply Reality?*—The language of this question has at least two meanings. (*a*) Does value imply reality, in the sense of the reality of value? (*b*) Does value imply reality, in the sense of the reality of the object which possesses value?

(*a*) Professor Urban answers this question in the affirmative. That is, he holds that value implies reality, in the sense of the reality of value. And this is, I believe, a correct view (though one which differs from that of Rickert, who limits the word "reality" to a narrower denotation).[32] Of course reality does not here mean existence or subsistence, or any form of being whatever; it means genuine validity, as opposed to merely specious validity. But the word "value," unless qualified to the contrary, would naturally mean real or genuine value. In that sense, at least, value implies reality.

(*b*) Our author holds also that value implies reality in the sense of the reality of the object which possesses it. He writes: "Though we can not say that value necessarily presupposes either the existence or subsistence of its object, we feel compelled to say that it presupposes reality [of its object]."[33] Again he writes: "Every value, we found, presupposes the reality of its object."[34] Have we indeed "found" this in these articles? Has Professor Urban justified this very significant assertion?

Let us note that Professor Urban's position would logically follow, if one held that reality is, as I expressed it before, the value *par excellence.* That is, it would follow if one held the view that reality and value are in the last analysis identical, or even that they are "sides of the same characteristic."[35] But Professor Urban can not argue from this premise. He has definitely rejected it, as a "romantic" and "sentimental" belief.[36] How, then, does he attempt to justify the thesis that every value presupposes the reality of its object?

[32] *Gegenstand der Erkenntnis,* 3d ed., p. 361.
[33] This JOURNAL, Vol. XIV., p. 319.
[34] *Loc. cit.,* p. 324.
[35] Bosanquet, *Principle of Individuality and Value,* p. v.
[36] This JOURNAL, Vol. XIV., p. 326.

Professor Urban advances, so far as I can see, only one argument. He writes: "In a word, the reason why we can not think value without its implying the reality of its object, despite the fact that the object is unreal in any limited sense of the definitions, is because reality is itself, in the sense meant, a value concept."[37] That is, value implies the reality of its object, because reality itself is a value-concept. This seems to me to be a fallacious argument. "Reality is a value-concept." But Professor Urban means by this merely that reality is a species of value, and one among several species. Reality is some form of value, but it is not identical with value or joined with it in the sense that they are two sides of the same characteristic. We see then that Professor Urban's argument amounts simply to this: If an object has some form of value, it also has reality, since reality is some form of value. The argument does not distribute the middle term universally, and so falls to the ground.

The assertion that "every value presupposes the reality of its object" is a very significant one. It may be capable of being justified, but it has not been justified by Professor Urban in these writings.

10. *So-called Antinomies of the Value Consciousness.*—Professor Urban in his third article speaks of certain " antinomies of the value consciousness" which are, I think, plainly fictitious. "Though we can not say that value necessarily presupposes either the existence or the subsistence of its object, we feel compelled to say that it presupposes reality. Though we can not say that value (properly speaking) either exists or subsists, we feel compelled to say that true values are real. Is there any solution to these antinomies of the value consciousness?"[38] The solution of these supposed antinomies is, I think, obvious, so obvious that there is no reason to speak of "antinomies."

As to the first supposed antinomy, it was maintained above that the "thesis" (*viz.*, that value presupposes the reality of its object) has not been justified. But whether the "thesis" be true or untrue no antinomy or contradiction is involved, since a distinction between existence and subsistence on the one hand and reality on the other has already been established in the article before us.[39]

In the second "antinomy," the "thesis" (*viz.*, that "true values are real") is true; but, as in the former case, it does not contradict the supposed " antithesis." In this " antinomy " we affirm that value may be real, and deny that it may exist or subsist. But a distinction may rightly be drawn between being, in its two

[37] *Loc. cit.*, p. 325.
[38] *Loc. cit.*, p. 319; *cf.* pp. 316, 318, 325.
[39] *Loc. cit.*, pp. 311–312.

forms of existence and subsistence, and validity; and Professor Urban has drawn it repeatedly in these papers. In view of this distinction, we may say that value does not exist or subsist, but that it is nevertheless real, its reality consisting in its validity. Yet Professor Urban sees here an antinomy. After having, as the reader might suppose, accepted (at least for the purposes of the present discussion) the doctrine that being and validity are two separate and distinct forms of objectivity (and therefore, of reality), he finds an "antinomy" in the circumstance that value possesses one of them, but not the other. There is, in fact, no antinomy present, so long as the distinction on which the argument of these articles is predicated is adhered to.

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REVIEWS AND ABSTRACTS OF LITERATURE

Elements of Folk Psychology. Wilhelm Wundt. Translated by Edward Leroy Schaub. London and New York: The Macmillan Company. 1916. Pp. xxiii + 532.

The reactions of the reader upon this book vary significantly as he travels through it. At the beginning he accepts in good faith the author's word that it is a work of folk psychology; before he is half through he is convinced that it is more *Kulturgeschichte* than *Völkerpsychologie,* more descriptive than explanatory in psychological terms; at the end he scarcely cares what the title is and is ready to declare that if this is not philosophy of history (Wundt denies that it is), at any rate real philosophy of history will have to reenter the forum of human respect by this portal. Taking it as covering the border-zone between social psychology and culture history it appears more orderly than Lippert's *Kulturgeschichte* or Sumner's *Folkways,* more comprehensive than Tylor's *Primitive Culture,* less challenging and creative than the works of either the great English "animists" (Tylor and Frazer) or their French critics (Durkheim, Levy-Bruhl, *etc.*).

The contents of the work split into four unequal parts following the author's analysis of human development into four stages, the primitive, the totemic, the heroistic, the humanistic. Naturally, since these stages imply an evolutionary sequence, they are not water-tight; for example, the term primitive can only be relative, and each successive stage carries in it the germs of a new order of culture. While this method of exposition suffers from a certain vagueness with re-

gard to the definitions and boundaries of the stages, it gains enormously through treating the phenomena of each step as a more or less organic complex. It is this fact, perhaps, more than any other that might entitle the work to be called folk psychology; but it is at the same time the soundest reason for classifying it with the work of Comte or Spencer.

Precisely because each stage of social evolution is a complex, it is difficult to reduce it to a single characteristic mark; recall Comte's attempt. Wundt is no more successful. In one place he writes: "In this relative sense, we may doubtless say of the three eras following that of primitive man, that totemism is the age of the *satisfaction of wants,* the heroic age, that of *art,* and the succeeding period of the development of humanity, that of *science*" (p. 448). But his own exposition transcends the limits of these narrow categories. Man is in the primitive state "so long as he is essentially limited in his immediate means of support to that which nature directly offers him or to the labor of his own hands" (p. 121). His intelligence, while not intrinsically inferior to that of civilized man, operates in a restricted sphere; his morality depends on his environment; he is peaceable because there is little to fight about; he is monogamous by circumstance; the emotion of fear is regnant, and expresses itself in belief in magic and demons; his social organization is rudimentary and static, largely, shall we say, because of his damned wantlessness—the classic charge against the poor!

The second, or Totemic Age, is zoomorphic rather than demonic, and manifests a considerable degree of more or less spontaneous institutional activity. Several new factors enter, notably cross-fertilization of cultures, migration, invention, and cults, particularly fetishism and ancestor worship. But totemism itself gives the distinctive color to this age. Out of it develops a rich crop of social phenomena: dominant personalities, leading to permanent leaders and the chieftainship; the taboo, particularly the privilege taboo; tribal organization, warfare, migrations, exogamous marriage, polygamy, group marriage, paternal descent, and Märchen-Myths. Two significant developments in this age provide the means for transcending it, namely, the passing of the *sacred* animal into the *useful* animal, and ancestor worship.

The third stage, the Age of Heroes and Gods, is marked off by the predominance of individual personality, the origin of real religion, the rise of the state, custom, law and individual rulership; by folk migrations, plough culture, breeding of domesticated animals, private property and social differentiation based upon it, division of labor, war, slaves, trade, colonization, military organization, cities, the patriarchal family, the hero-god, the world beyond, and art. In

brief, conscious or telic, contrasted with spontaneous, social organization, and national religions—these are the achievements of this age. The hero-god was necessarily national and local because he was a fusion of local fears (the demon) and local ideals (the hero). Wundt improves upon Voltaire's famous aphorism by the declaration that "the god was not created directly in the image of a man, but rather in that of the hero, man idealized" (p. 371). While art is not the only hall-mark of this stage, it plays a considerable rôle. The "heroic age includes the two most important epochs in the entire history of art. These are the origin of a true religious art, and the attainment of an esthetic independence which allows art to extend its influence to all departments of human life" (p. 450).

The final age, the Development to Humanity, is, frankly, only a becoming, perhaps never attainable. But the steps toward that goal include four progressive evidences of the "gradual rise of feelings of humanity"; world empires, world culture, world religions, and world history. This is the least satisfactory section of the book, partly because of its almost inevitable vagueness, and partly because of the impossibility of compressing so complex an analysis into fifty pages. The history of the last three years also heightens the note of wistfulness in it and reinforces the author's admission that human imperfection makes doubtful the realization of such a level of world consciousness.

The particular merits of the book proceed from the author's masterly power of synthesis, his clarity of thought (aided by careful translation), his clear-cut classifications and his organic method. Particularly welcome are his rejection of naïve nature-phenomena explanations of religion and mythology, his contradiction of the "natural aversion of house mates" theory of exogamy, and his criticisms of rationalistic theories by which civilized notions are projected upon the plane of primitive thought to interpret primitive practises. It must be admitted, however, that men like Levy-Bruhl have performed this latter service even more thoroughly and constructively. While it would no doubt have been unsafe to posit that humanity has evolved universally through a set of fixed sequences such as Wundt has here marked out, yet the whole argument would have gained conviction if he had suggested which people have and which have not actually climbed this ladder in just the prescribed order. Otherwise we are left almost where the Hegelian philosophy of history dropped us. Are we sure, for instance, that totemism is a real universal or that monogamy is a universal primitive trait or that human always succeeds animal sacrifice?

In such a broad and schematic treatment certain debatable issues were inevitable. For example, the "motives" offered in explanation

of polygamy (p. 43) are highly insufficient and reveal the weakness of any purely psychological explanation. Similarly, the discussion of *couvade* (p. 198). Again the horde theory of primitive society is dismissed a little too cavalierly (p. 47). Moreover, nobody is justified by present evidence in calling the gorilla monogamous. In the discussion of primitive domestic life certain evidence is omitted which makes the assumption of permanent monogamy less justifiable. Wundt recognizes the pygmies as real primitives, but fails to consider their anything but steady matrimonial habits. Again, the Negritos whom he credits with monogamy are just as polygamous as circumstances permit. Hence the necessity for qualifying his marriage sequence (monogamy, polyandry, group marriage, polygamy, monogamy) by beginning with intermittent or natural pair marriage (more or less fragile and promiscuous pairing) and arriving at real or ethical monogamy.

We are left still in doubt as to why the dead person becomes a demon to primitive men. Wundt (p. 82) says it is because they regard life "as something that, in part, continues in some mysterious manner to dwell within the corpse, and, in part, hovers about, invisible, in its vicinity." But this tells us nothing more than the bare fact. It is no explanation. Yet it is a foundation stone to the whole subsequent argument. The same criticism applies to his discussion of fetishism. Part of the trouble, I suspect, lies in his failure to reckon with that whole set of facts which we are learning to call energism or dynamism, those beliefs in "mysterious emanation," mana, orenda, wakanda, manitou, *etc.*, which are so widespread. It is significant that nowhere in the book can we find any mention of the work of Codrington, Jones, Durkheim, Levy-Bruhl, and others who have utilized these phenomena in getting back of the primitive mind. That is to say, the author is still too deeply infused with orthodox animism. This is perhaps the capital lacuna in the whole work. Another almost equally grave oversight is the omission of all reference to Frazer's work in the discussion (p. 436) of sacrificial death of representative deities. No less striking is the overlooking of the aleatory or luck element in primitive thought, so ably handled by Sumner in his *Folkways*. Still another curious slip is the assumption (p. 41) that discussions of Morgan's theory of classificatory relationships have overlooked the fact that they were based not upon kinship, but upon age. Indeed, this is one of the stock arguments against Morgan, and is one of the points involved in Rivers's rehabilitation of him. (Why, by the way, is *Lewis* invariably called *Lewes* Morgan, and why is his book called *Ancient Humanity* in one place (p. 38) and, correctly, *Ancient Society* in another?)

Wundt rejects the degeneration hypothesis which would account

for fetishism as decadent religion. He makes much of the development of gods out of demons, but overlooks the reverse process and its psychological explanation: that is to say, the policy of deliberate depreciation by the conquerors of the deities of the conquered, by which they become demons, satyrs, deuces, *etc.*

The sections on totemic and heroistic religion will demand the most respectful hearing, for they abound in shrewd generalizations and flashes of insight. The parallelisms between Christianity and Buddhism (pp. 497 ff.) are particularly illuminating. The pretensions of monotheistic religions are laid low in this passage (p. 354): "The fact is undeniable that philosophy alone really exhibits an absolute monotheism. A pure monotheistic belief probably never existed in the religion of any people, not even in that of the Israelites." Both students of comparative religion and folk literature will find much to ponder over in the discussion of Märchen, myths, sagas, and legends. A typical and suggestive generalization crops out of that discussion, namely, the saint legend is distinctively more primitive than the real heroic saga; its tendency is retrogressive, towards a return to the Märchen stage of myth (p. 383).

On the whole, this is a book of great power and tremendous sweep, and withal highly readable. But its appeal can hardly be so wide as it deserves. For it is decidedly beyond the beginner, particularly in the discussion of totemic social organization, and in general by its lack of summaries or other crutches. And it offers no inducement to the specialist except as a general review, since it eschews all references and bibliographies. Moreover, there are several rather tiresome repetitions, necessitated no doubt by the architectural plan of the argument itself. But it should prove very valuable to the general trained reader and to those workers whose interests require an occasional foray into the field of genetic sociology. It offers much also to the comparative religionists.

The translator, Professor Schaub, has rendered a notable service with distinction, for the text reads like an original. Here and there, however, slips in proof-reading mar its quality (*e. g.*, pp. 197, 344, 428). And I confess that the constant reiteration of the phrase "I refer to . . ." is a depressant.

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Man: An Adaptive Mechanism. GEORGE W. CRILE. New York: The Macmillan Company. 1916. Pp. xvi + 387.

Dr. Crile gives us a theoretical interpretation of the recent studies in the action of thyroid and adrenals viewed as part of the evolutionary explanation of life. After a preliminary statement of the

law of selection and many applications to the details of development of higher and lower organisms, the book gives a detailed theory of the action of what the author calls the kinetic system,—the brain, liver, thyroid, adrenals, and the muscles. This system is specifically adapted to transform potential into kinetic energy for the production of heat and motion. The greater portion of the book is devoted to the study of the effects of the brain, thyroid, and adrenals in hastening the energy transformations in cases of emergency, during emotion and fatigue, with mention of similar disturbances in disease.

It is asserted that the tissues of the brain, adrenals, thyroid, and liver show the same characteristic changes in emotion, fatigue, and in certain diseases. This corresponds to the excessive action of these structures in each state. A number of generalizations makes very simple the explanation for many apparently complicated phenomena. Fatigue, excessive emotion, and many diseased conditions are due in the last analysis to an increase in the acid in the blood (acidosis). This is induced or increased by action of the thyroid and muscles, and normally compensated for by the liver, by the adrenals, and by respiration, which is automatically increased by the stimulation of the medullary centers by the acid of the blood. Many interesting corollaries of this theory are noted in connection with medical and surgical practise.

Some of the general statements seem not justified by present knowledge, however suggestive they may be as hypotheses. Thus the Nissl bodies are identified with adrenalin; it is suggested that nervous action may be due to electric interchange between the acid tissue of the brain and the alkaline tissues of the periphery; and that unconsciousness accompanies excessive acidosis, because when the difference in potential between center and periphery is thus reduced to zero, nervous impulses no longer pass. In spite of or perhaps because of these extreme hypotheses and marked simplification of explanation, the volume will prove interesting and stimulating to the cautious reader.

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JOURNALS AND NEW BOOKS

REVISTA DE FILOSOFIA. March, 1917. *Los que pasaban* (pp. 161–202): Paul Groussac. – An account of the life and influence of Pedro Goyena. *El espiritu según Bergson* (pp. 203–214): Enrique Molina. – Instead of the mystery of the transformations of energy produced in the brain cells, Bergson adduces the still greater

mystery of an unintelligible mind which forms the essential basis of psychical life. *La cultura científica en los paises hispano-americanos* (pp. 215–232): ALFREDO COLMO. – Scientific discoveries are manifestations of the evolution of human intellect, far later in time than the production of the works of art. They can not take place among primitive peoples. *Las doctrinas de Cabanis y sus proyecciones pedagógicas* (pp. 233–249): J. A. FERREYRA. – The glory of Cabanis consists in his having laid the foundation of psychological physiology, and in having devoted his genius to the education of his contemporaries. *Notas sobre la mentalidad colonial* (pp. 249–296): JOSÉ INGENIEROS. – Education in the colonial period was directed to serve the interests of the Spanish monarchy and of the Papal See. *Analisis de libros y revistas.*

Science and Learning in France: With a Survey of Opportunities for American Students in French Universities. An Appreciation by American Scholars. Society for American Fellowships in French Universities. 1917. Pp. xxxviii + 454.

Stevenson, B. L. Socio-Anthropometry: An Inter-Racial Critique. Boston: Richard G. Badger. 1916. Pp. 153. $1.00.

Studies in Psychology. Contributed by Colleagues and Former Students of Edward Bradford Titchener. Worcester, Mass.: Louis N. Wilson. 1917. Pp. 337.

NOTES AND NEWS

THE January-March, 1917, number (Vol. IV., No. 1) of the *Memoirs of the American Anthropological Association* is devoted to an extremely interesting study by E. Sidney Hartland on "Matrilinial Kinship and the Question of its Priority." Mr. Hartland brings together very carefully the evidence at present available with the result that he finds the claims of priority for paternal descent unwarranted, leaving the burden of proof upon the shoulders of those "who deny that female descent has in any particular case preceded the reckoning of kinship exclusively through males."

M. EMILE BOUTROUX, professor of philosophy at Paris, has been appointed Herbert Spencer lecturer at the University of Oxford for the present year. A Romanes lecturer at the university has not been appointed, the income having been transferred to the emergency relief fund of the university.

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ROUSSEAU AND POLITICAL HUMANITARIANISM

I

THERE is a dramatic propriety as well as a scholarly interest attaching to the appearance of Vaughan's edition of *The Political Writings of Rousseau.*[1] The work was published in 1915, nearly a year after the outbreak of the War, which, as the editor tells us in his preface, came upon the eve of the completion of his undertaking; hamperingly with respect to one detail, for he had planned to devote August, 1914, to a trip to Cracow, there to collate his text with the manuscript of the *Gouvernement de Pologne,* discovery of which had been announced in 1912. The defect of such a detail (which some future printing may amend) rather emphasizes the definitive character of Professor Vaughan's work, the objects of which are best stated in his own words: "to collect all the political writings of Rousseau in one body; to present a correct text of what he wrote; and to define his place in the history of political thought." These objects are measurably attained in the work offered to the public. There are, no doubt, in the non-political writings of Rousseau passages not here assembled which bear upon his political philosophizing (for the "natural" and the political" man are not so separable in the process as in the product of Rousseau's reflection); but there is certainly nothing of importance for the understanding of his author's political thinking which Professor Vaughan has failed to include in his collection, while, in the way of positive virtue, this collection adds fragments unpublished in editions of the collected works of Rousseau. The most interesting of these fragments is surely that on *L'état de guerre,* from the Neuchâtel manuscript, though certain chapters in Book I. of the first draft of the *Contrat social* are hardly second to this. The editor's further aim, to present a correct text of what Rousseau

[1] *The Political Writings of Jean Jacques Rousseau, Edited from the Original Manuscripts and Authentic Editions, with Introductions and Notes.* C. E. Vaughan. Cambridge: University Press. 1915. 2 vols. Pp. xix + 516, and 577.

actually wrote, has persuaded him into a minute scrupulosity in the notation of variants that would seem finical were its end less important; for he has succeeded in correcting a vast number of obvious errors in the current texts, and in giving what is far the most accurate version of Rousseau's word and thought. Finally, in his general introduction, and in several minor articles Professor Vaughan has contributed a study of Rousseau's place as a political thinker with which future students of this field of speculation must squarely reckon. Even a cursory examination of this edition of Rousseau's *Political Writings* will establish the conviction that its editor has not only performed a task honorable to scholarship, but that he could not have performed it with so painstaking a devotion had his labors been animated by less sustaining a sentiment than complete faith in the permanent importance of his subject's contribution to human welfare. The Vaughan edition is a finely conceived monument to Rousseau the thinker.

And it is in this that lies the dramatic propriety of the appearance of the work at the present hour. Rousseau is not the founder of the humanitarianism of the Enlightenment; but he is the subtlest and the most influential exponent of that political idealism which is the Enlightenment's greatest contribution to human thought and to men's affairs—the political idealism which gave to the period its particular humanitarian cast, and, indeed, added a special (and we hope, ineffaceable) color to the meanings of the words "humanity" and "humane."

Rousseau was a citizen of the one small state which, in his day, stood in the wide world conspicuously for republicanism. His life fell in the yeasty years of the diffusion of democratic belief among the peoples of western Europe, and none can be said to be premier to Rousseau as an agent of this diffusion. The political revolutions which, beginning in America and proceeding in France in the eighteenth century, were, in the nineteenth and early hours of the twentieth, to convert the greater portion of the world's states to republicanism, had already in Rousseau's lifetime made their first and most difficult move in the revolution of men's ideas in regard to polity. There are writers who tell us that the revolutions were the outcome, not of ideas, but of blind social instincts following the modelings of chance social environments; the contemporary apology for Teutonism, that it is the inevitable explosion of a pent-up *geistliches* gas, is a notion of the same stripe; but such opinions must here be passed (somewhat wearily, I confess) without controversy; the important fact remains, that, be they symptoms or causes, men's ideas are at least their conscious explanations of their actions. Now the soul of sound explanation is clear definition; and of such clarity

Rousseau is master to a degree which makes him more than a father of the Revolution. Indeed, the greatest interest which attaches to a present-day examination of his doctrines is not as to whether they were the conscious impulses which French Revolutionists, in quoting them, believed them to be, but as to whether either the subtlety or the truth of Rousseau's theory has up to our time been understood by statesmen or embodied in institutions. Our real concern with Rousseau is with the possible discovery of a teacher of political truth for the great hour of to-day.

The final version of the *Contrat social* was published in 1762. In 1915 what will long be the standard reference edition of this and the related writings of its author appears in the midst of a stupendous war—a war which is being consciously fought for the overthrow and for the maintenance of political principles which Rousseau defined more capably than has any other modern. This, in itself, is sufficient incentive for a keen-minded return to the study of those humanitarian doctrines in which our democracies were nurtured. It may be a fact (though democrats can not believe this) that the modern emancipation of peoples was founded in delusion, and has been leading on to disillusion, now at hand; but even in such case it were the caution of reason to discover how so great an error of nature could have infected men's minds. It can hardly be less than fact (as the trial of democracy shows) that the core of democratic truth is even now but vaguely touched by the most convincedly democratic peoples; and this being so, there were only denial of reason in remitting the great analysis. Who, indeed, can doubt that the decades which are to follow the close of the world's most terrible political war will see men turning avidly to the study of political theory, striving to discover some wisdom of thought which will enable them to reduce the courses of their lives to order and to meet with mastering discipline such great upsurgings of brutish passion? The task of a generation of thinkers is set relentlessly; the dial indicates the appointed hour; philosophy must descend from the heights into the camps and towns of men.

Is Rousseau still a guide in the field of discovery? Reputation assures him, at all events, a place beyond neglect. It is true that there are critics—concerned more with his personality than with his thought—who see in him only a sentimentally romantic adventurer into the realm of ideas. On the other hand, the editor of this new edition of his political writings—from which the personal and adventitious is judiciously omitted—pays him such tribute as must challenge attention. Conceding Rousseau's shortcomings, still "there are two things which can never be forgotten. He gave men faith in their power to redress the wrongs of ages. And he held

forth an ideal of civic life which has changed the face of Europe. Thanks to the *Contrat social,* the leaden rule of bureaucracy, hard though it be to break, is weakened and discredited. The ideal of a free people, united in one 'corporate self' and working out one 'general will,' is coming, slowly but none the less surely, to take its place. That is the debt which the world owes to Rousseau. That is the glory which nothing can take from him.'' These claims command consideration, above all in an hour when no source of political truth can be allowed to pass untested.

II

Theories of polity rest ultimately upon conceptions of human nature. These conceptions may be no more than dim prepossessions —as when the elders of Israel come to Samuel demanding a king, ''that we also may be like all the nations;'' or they may be themselves conscious and elaborated theories, as when Plato astutely figures the ideal state as but the great projection of the virtues of the ideal man. But in all cases where we can speak of conscious politics, there is covert or evident some determining idea of what men are or of what they ought to be. In a fair sense, the history of both political institutions and political speculation is exemplary of Aristotle's rule: that the first step to the discovery of what a state ought to be is the discovery of what men and life ought to be.

Broadly taken, with reference to this relation of political to anthropic theory, there are but two radical conceptions of man, and, correspondingly, but two radically different classes of theories of statecraft. The first, and by odds the more ancient division of thought, conceives man theologically and the state theocratically; the second, new in the world of Hellenism, conceives man naturally and the state legally—or, as we might say, it sees both man and state with near and human vision. Each of these types of theory, theological and naturalistic, has numerous historical variants; nor are there wanting mixtures, borrowing from both, as in Aquinas and Hobbes —though in the mixed examples it is not difficult to perceive which is the parent stem and which the graft. But allowing for these, the broad division still remains radical; indeed, the world is at war to-day because that division is ineffaceable.

It were mere mythology to hark back to Frazer's sacred and sacramental kings for the beginnings of the theological theory. History, from its twilight days onward, is writ with example. The Pharaoh who was son of Amon; the Israelitic king, anointed of the Lord; the Cæsar whose genius was the sovereignty of Rome; the Holy Emperor proclaimed and crowned by the Pontiff of Christendom; the Hohenzollern Kaiser, '' taking his crown from God alone, without interven-

tion of peoples or parliaments ''—all belong in the one series, and all rest their claims upon the assumption that God is the disposer of fates which men are too contemptible to mold for themselves. '' The great Gods, Determiners of Destinies, making great my Kingdom, I, Shalmaneser, King of multitudes, hero of Ashur, ruler of the Four Zones, all the world kisses my feet!'' So run the earlier chapters of the world's history. A dispatch from Berlin (August 2, 1917) quotes Burgomaster Reicke, of Berlin, as saying: '' We call for the benefit of the counsels of workingmen, but the word is quietly passed from the government table, ' These fellows can not be told all; just treat them like children.' What is wanted is . . . a government of men who are not educated to believe that a bureaucrat necessarily knows better than an ordinary mortal.'' The difference between these two utterances,—of the Assyrian king and the German burgomaster—is not so much distance in time as distinction of the points of view of individuals viewing the same kind of political fact.

The theological conception of the state implies necessarily the assumption of chosen rulers and a chosen people. In the earlier stages of the world's history, the ruler divinely elect was less concerned with the grounds of his elevation—usually divine descent or kinship—than with the fact and the obligations he conceived it to entail: if kings were '' hostile to Ashur '' or if the smoke of burning cities were a savor in the god's nostrils, the duty of the '' sons of Ashur '' was defined. The wars of the Faithful (Christian or Muslim) against the Infidel (Muslim or Christian or Pagan) were not actuated by a different motive—which is still in our own day, in the antithesis of white men and brown, more than a reminiscence.

But such prejudices, in the course of time, come to be fortified with conscious theory. Already in the Jewish prophets is introduced the idea that the Chosen People endure suffering and captivity as the penalty of dereliction in worship. Christian theology, catholically affirming the demerit of mankind with the salvation of an elect few by act of grace, drew up the plan for a more satisfyingly rational philosophy of the state. Man by nature is corrupt, anarchical, helpless of salvation; he *is* damned and without help from above must remain damned; only the Divine Grace can vouchsafe that help, and it does vouchsafe it in the two institutions, Church and State, which are its temporal vehicles; for man, prelate or communicant, monarch or subject, there is no duty save obedience; for the institution, civil or ecclesiastical, there is needed no sanction save its divine imposition. This is the conscious philosophy of Aquinas and Dante; it is the root of the conceptions of Calvin and of Hobbes; and it is not fundamentally evaded even by such thinkers

as Milton and Grotius. Indeed, from the reign of Constantine to Louis XIV. and the last of the Stuarts this philosophy was the moral bulwark of practically all European kingships.

Of all the presentations of the theological theory of man and state, the most majestic is the *De Monarchia.* Dante's point of departure is the *finis universalis civilitatis humani generis,* for he says, "it were folly to suppose that there is an end of this civilization and of that, and not one end for all." The nature of this end is determined by human nature: creation exists not for the sake of the created beings (individual men), but for the proper functioning of the creatures. With man, this *operatio propria* is the actualization of the potential intellect with which he—alone among creatures—is endowed. But this process can be effectively realized only under a universal peace—"the best of all those things ordained for our blessedness;" which implies a ruler, to judge the contentions of men. Further, since the whole human race is ordained to a single end, this ruler must be one and single—"all parts should be subordinate to kingdoms; kingdoms themselves should be ordered with reference to a single prince." the emperor; and the whole civil world be thus reduced to hierarchy. Granting his contentions as to the meaning of life and the goal of civilization and assuming the validity of the historical arguments by which Dante would establish the claim of the German Emperor, his conception is at once grandiose and rationally sound.

Certainly the medieval theory, with its dogmatic bluntness, is far more respectable than its psychologized ectypes of the Hegelian schools. Hegel's notion that history is a theodicy, a progressive manifestation of God in creation, is, of course, the medieval view. But when he and his kindred thinkers go on to expound their theodicies in terms of outer sense being molded to inner form, that the latter may contemplate itself as structured from evaporated particularities (for when "the authority of rational aim is acknowledged, privileges and particularities melt away before the common object of the state") and apexed by self-sufficient absolutes ("the government rests with the official world, and the personal decision of the monarch constitutes its apex")—then, we are far in the morass of the over-individual state. It is in this morass that half the civilized world is to-day embogged.

III

Over against this theological theory of man and the state is the naturalistic or humanistic theory classical in origin and rationalistic in form. It is implicit in the early traditions of "wise men" as lawgivers; it is conscious and express in the activities of sophists

teaching an art of politics; it is quite open in the manneredly ingenuous remark of the Athenian envoys, "Of the gods we believe and of men we know that by a law of their nature wherever they can rule they will." Socrates, descending from the clouds to ask about justice, proposes to probe this theory to its truth; and Plato, carrying forward the investigation, discloses the essential truth.

The *Republic* is not less instructive in its method than in its content. Plato begins exposing current superficialities—the shallow honesty of the merchant's son, the shallower *Machtpolitik* of the sophistic bully. He goes on to sketch the pattern of a state endowed with the virtues which most men concede, with justice and temperance and courage and wisdom, and he shows that these virtues, in the macropolis, are but the true enlargement of the virtues of the micropolis, which is the citizen's soul, and that citizenship itself is truly measured by the fairness and harmony with which these virtues are developed. Thereat, having completed the reduction from state to citizen, he reverses his procedure, asking subtly what is the nature of that good of which the virtues are the instruments; for if the virtues of the state are patterned in the virtues of the man, then the good which the state is meant to bring will be found patterned in the good which is the height of human nature. That good Plato finds to lie in knowledge, and in the kingship of philosophy; and having determined this, he turns once again to statecraft, judging states by the types of men which they engender and by which they are in return engendered. But the inquiry is still not ended. The ideal state exists for the manifestation of what is good in human nature; but the good that is in human nature is at the last definable only by the good that is discoverable in metaphysical nature—that is the supreme sanction and the supreme sovereign, the revelation of which (using the language of myth) is the vision of Er.

Plato's method here is simply and rationally empirical. The state is measured by human nature; human nature is the glass in which we must read universal nature: "macropolis, micropolis; microcosm, macrocosm." In the course of the argument all the essential ideals of Greek polity are defined, directly or by implication. Justice is a harmony of the *human* virtues; and these virtues are civic for the reason that man is by nature and necessity a political animal. Law is the law of nature, reflected in human interpretations or insights—for nature itself is humanistic. The sovereign is that good which all men desire, and which intelligence may attain —for in the world by which men are created the good is sovereign. Finally, liberty is the recognition of law, provided that law is founded upon knowledge of the good. As Aristotle has it, "the *good* man is the measure of everything." Plato's ideal polity is

often described as being socialistic; but in truth neither he nor Aristotle ever loses sight of the fact that the state exists only for the well-being of the individual, and in a supra-social, a metaphysical sense. Man is political, and the state should bring him realization of his political responsibilities; but he is also more than political; he is philosophical, and the state should leave him free to realize his philosophical possibilities. This does not mean the anarchy of personal lusts—as so many moderns would make democracy to mean; it means instead the rational imitation of a pattern citizen, a type of human being, an ideal individual life, with a "work" to do. Nor does it mean—as the Hegelizers infer—that the individual is to be absorbed in the state, the structure itself being the end. Plato has once for all divided himself from the collectivists in that divinest of his utterances: "In heaven there is laid up a pattern of it, which he who would may behold . . . but whether such an one exist or will ever exist on earth is no matter, for he will live after the manner of that city, rejecting all other."

To the ideal programme of Plato's *Republic* there is a curious and striking parallel in the development of Roman law. This begins with the formulation of the customs and enactments of the early city in the *jus civile,* expressing current and uncritical conceptions of duty. It proceeds, with the growth of the Republic's empire, to a recognition of the virtues of states as men empirically know them, expressed in the *jus gentium.* As a consequence of comparison, and a search for general principles, it seeks to define what is fundamentally true of human nature, and this is the *jus naturale;* and finally, in some Stoic rulers at least, there arises the conception of the metaphysical foundation of the natural law of mankind in their universal citizenship in the cosmopolis. The whole procedure is, as it were, a vast historical elucidation of Plato, beginning and ending, as did he, humanistically, and in the process establishing such a body of legal thought that the Persizing emperors (West and East seeking to introduce Oriental notions of monarchical divinity) could not even color, with their purples, its rational humanism.

The root of that humanism is already vigorous in the *Lex XII. Tabularum.* "If one summon a man to court, let him go." "As the tongue shall have pronounced so let it be." "As a man shall have appointed by his will so let it be." Here are the definitions of responsibility—responsibility of the citizen to the courts, of neighbor to neighbor, of a man to himself; and it is such responsibility that is the charter of human freedom. Under the Republic a law was regarded as an obligation assumed voluntarily by the people: *populus iubet,* "the people bind themselves." In Justinian's *Digest* the laws are regarded as binding because "estab-

lished by the decision of the people ''; and the high point of Roman legal thinking is reached in Ulpian's definition of justice, which the *Digest* quotes, as '' a constant and perpetual will to give to each his right.'' The will, the intelligence, the consciousness of the citizen, is court of last resort.

To Roman jurisprudential philosophy Christianity brought its own peculiar addition. On the ecclesiastical side, and especially in conjunction with feudalism, Christian theology went strongly to the fortifying of hierarchy, and in politics, to the vindication of divine rights. But another, and with this inconsistent, doctrine appears from the first. Christian theology necessarily insisted upon the freedom of the individual will.

> Lo maggior don, che Dio per sua larghezza
> fesse creando, ed alla sua bontate
> più conformato, e quel ch' ei più apprezza,
> fu della volontà la libertate,
> di che le creature intelligenti,
> e tutte e sole furo e son dotate.

Dante tries, in the *De Monarchia,* to twist this need for freedom of judgment to the cause of absolutism (only the judgment above greed can be free, and only the monarch can have this); but the incongruity is gaping. Milton is far more rational in employing the same theological premise to justify the free commonwealth. God gave Adam '' freedom to choose, for reason is but choosing; he had else been a mere artificial Adam, such an Adam as he is in the motions. . . . They are not skilful considerers of human things who imagine to remove sin by removing the matter of sin. . . . Suppose we could expel sin,'' by removing temptation, '' how much we thus expel of sin, so much we expel of virtue: for the matter of them both is the same. . . .'' God, '' though He commands us temperance, justice, continence, yet pours out before us even to a profuseness all desirable things, and gives us minds that can wander beyond all limit and satiety.'' Liberty of this parlous type represents a far cry from that freedom which Hegel makes the genius of the German world—'' an unlimited self-determination which has its own absolute form as its purport.''

Of the Christian contribution there is no more striking statement than that of Las Casas's ''Memoir on the question as to the power of kings to alienate their subjects, their cities, and their jurisdiction.''[2] All men are by the right of nature free, says Las Casas—and his

[2] This ''Memoir'' is included in *Œuvres de Las Casas,* edited by J. A. Llorente (Paris, 1822). Llorente's French version is translated from the first published edition, *Quæstio de imperatoria vel regia potestate, etc.* (Speyer, 1571.)

words have the ring of a trumpet. Reason and the civil law both recognize this truth. "The human species having everywhere the same reasoning nature, God has not willed that one man be born subject to another, but that all should be equal—for, following St. Thomas, the essence of the intellectual faculty is not a thing relative from one man to another, but a moral being, absolute, essential, and necessarily pertaining to each individual; in sort that individual liberty is a right accorded by God himself, as an essential attribute of man —which is, in fact, the principle and source of natural right [*jus naturale*]." Las Casas, whose "Memoir" is a veritable bill of rights, goes on to lay down the foundations of politics. A "freeman" is "one who enjoys the power of exercising his free will as he understands it, in disposing of his person, his goods, his actions and his rights, without being submitted to the necessity of obtaining permission to do so from another man." "The free will of the nation is the unique efficient cause and the sole immediate and veritable source of all power of kings and princes;" and the nation, freely expressing its wish, is "also the sole veritable final cause and object of this transmission of power," whose object is "the advantage or good of all." Power is delegated to rulers only with "natural reservations, not expressed by the men, conserving intact their independence and that of their goods, and the right of submitting only with their previous consent to deprivation of goods and the establishment of imposts." "Liberty is the greatest good a people can enjoy." The king "has no power to command what is contrary to the public good, because he has no authority except as minister of the law." Alienation can only be with "the consent of the nation, when for the good of the state or from political necessity such action is useful," for "the state is a moral body," not a property.

Las Casas is worth quoting at length, for we are not accustomed to think of a sixteenth-century Spanish friar as a formulator of the principles of American independence, none the less virile because his reasonings bear the flavor of scholasticism. Like Milton, he is in spirit of the Renaissance, in spirit a humanist, and more than a precursor of the humanitarians. Other Renaissance thinkers are humanistic without being humanitarian. Machiavelli, frankly cynical of morality, making the tyrant's lust the measure of political sagacity, is such an one. So also is Grotius, who can conceive of a people as made up of individuals (*populus est ex eorum corporum genere quod ex distantibus constat*) bonded together by one habit and one spirit, but which, nevertheless, owes to its sovereign only submission. And again so is Hobbes, whose introduction to the *Leviathan* is a treatise on man, in which he sets forth with unrelieved pessimism such a picture of human nature as only theology and

anarchy could contrive—the picture of the natural man mired in evils, for release from which the loss of liberty were a cheerful price. Back of all such thinking there is the lurking medieval conviction that man is by nature corrupt, and that without grace from church and sovereign he is helplessly damned. There is, to be sure, one point with which this thought is in harmony with the Greek: the sovereign is still the good—only here the good is of another world than this and of another nature than man's.

IV

Few changes in the history of thought are more quiet and fundamental than that between the seventeenth and the eighteenth centuries. The difference is not so much of content of ideas, as of temper. Hobbes to Locke, Montaigne to Montesquieu, Calvin to Rousseau—everywhere the antithesis is sharp. The late Renaissance was intellectually eager, but spiritually it was still in the shadow of the middle ages; it studied the thought of classical antiquity with zest, but with all its humanism, it failed to assimilate that first essential of classical humanism—belief in the value of the immediate, cis-sepulchral life. It was thoroughly pessimistic of the world and the flesh, and it looked forward to Judgment far more with a gloomy gratification in the promise of just punishments than with any radiance of millennial hope. Such a belief, for example, as our modern one in progress was all out of its tune.

The eighteenth century is the first period to recover something of Hellenic optimism. The Enlightenment is all aglow with rosy reminiscence of the Golden Age and with rosier anticipations of Utopia. Man becomes transformed, and with his change of color the whole universe alters its hue. Jesus had taught centuries before that the private soul of a common man is worth saving—a doctrine that rang strange in the ears of pagans; but the fruit of Eden had, in a sense, theologically soured this teaching, and feudalism, ecclesiastical and civil, had gone all against its political realization. Now, in curious coincidence, a return to worldliness brought also a conception of spiritual democracy. It is true the armory of democracy was stocked in the seventeenth century: natural law and the rights of man, the social contract, liberty, equality, consent of the governed—all had been defined. But these arms could work no revolution until they were seized upon by men invigorated by a faith in men; and such were the thinkers of the Enlightenment. Locke, quietly assuming that the law of nature is the law of reason and that men are reasonable seekers after the good, makes of the original compact, not as it had been with Hobbes an instrument for the abjuring of natural liberties, but their stay and guarantee. Montesquieu, dispassionately

examining the legal concepts of all peoples in order to discover a law of laws, as it were from men's commonsense of right, restored to mankind—so Voltaire phrased it—the title-deeds of society. And Rousseau, not dispassionately, but passionately believing in man, erected the whole idealism of his time into a great brief for democracy.

The *Discours sur l'inégalité* and the *Contrat social* are the two prime documents of this brief. These two works, though published only a few years apart, have been taken as contraries: the *Discourse* as an extreme expression of individualism the *Social Contract* as a championing of collectivism. The contrariety, however, is far more apparent than real. Narrowly viewed, the two essays are complementary, not conflicting. Rousseau, being, like Plato, a philosopher of imagination, employs, like Plato, the language of myth: in the *Discours sur l'inégalité,* as in the still earlier *Discours sur les sciences et les arts,* the mythus used is of the aureate innocence of a Saturnian past; in the *Contrat social* it is a culture myth, the conversion of troglodytes into men. But if the subtler meaning of these myths be sought, it will be found that in both cases Rousseau is seeking to define the essential man; human nature is first taken in its individual aspect, and the consequences of its individualism are examined; it is taken again in its social aspect, and the consequences of this are followed out. It happens, as inevitably must be, that on the individual side the key to this nature is found to be emotion—and Rousseau is thence viewed as a "sentimentalist"; it happens again, and inevitably, that reason is the key to the interpretation of the moral nature—but Rousseau is rarely enough given the credit of his rationalism.

The main contention of the two Discourses is identical. Both are concerned with the cause of inequality among men. The *Discourse on the Sciences and the Arts* is devoted to the inquiry as to whether their cultivation has worked to a purification of morals; and Rousseau finds in the negative; their function has rather been to emphasize social complexities and to serve social inequalities: virtue, "the sublime science of simple souls," and conscience, heard "in the silence of the passions"—these furnish the sufficient philosophy of life to humble and equal men, unperturbed by the lure of renown. The Second Discourse attacks the same problem of inequality, not from the point of view of such secondary agencies as the arts and sciences, but in search of its fundamental cause. This is private property: "The first who, having enclosed a bit of land, assumed to say, 'This is mine,' and found men simple enough to believe him, was the true founder of civil society;" and thereafter, "slavery and wretchedness germinate and grow with the harvests." The recognition of those primitive conventions which were the first laws; the institution of the first magistrates: these steps follow, first as guaran-

tees of equality, but, as a result of abuse, eventually as sources of despotism. The last and worst degeneration of society is reached when men "become willing to bear chains in order to impose them in their turn," when "the rich cease to be happy when the poor cease to be wretched," and when rulers "give to society an air of apparent concord while sowing the seeds of a real division." In other words, it is the perversion of the moral sense that is the ruin of society.

For Rousseau rests his theory upon a clear-cut and fundamentally optimistic conception of human nature. What makes man man are his compassion for his fellows and his perfectibility. The operations of the human soul anterior to reason are two: first, the instinct for well-being and self-preservation; second, the repugnance which men feel at the sight of suffering in other sensible beings, especially men. Pity is a disposition altogether appropriate to beings as feeble and subject to so many ills as are we, and it is the more useful in that it precedes all reflection ("it is not necessary to make a philosopher of man before making him man"—this is directed at Locke); and pity is the source of all the virtues. The golden rule of natural goodness is: "Achieve thy good with the least possible ill to others." There is, however, a danger in this virtue of compassion: it sentimentalizes the passions, above all the passion of love, and in sentimentalizing intensifies them. Thence is born a dark progeny—jealousy, anger, blood-letting—and the moral nature, even in discovering virtue, is found to be discovering vice.

A similar peril attaches to human perfectibility. Perfectibility is the power which distinguishes man from the animals, for the reason that it is based upon the distinctively human power of free choice. Illimitable progress is made possible by this faculty, which "resides as much in the species as in the individual." But Rousseau is wise enough to see that the same power which makes possible progress makes possible its opposite; the quality which opens the path to perfection opens likewise the broad and easy decline. Particularly is this the case when the power of choice owns no master save the passions of the individual. Intellect and emotion mutually fortify and develop one another: it is by the activity of the passions that reason perfects itself; the passions in turn draw their origin from our needs and their progress from our comprehensions. For the man and the race whose choices are governed by passions—even when these are compassions—there is little prospect save for spiritual anarchy: such a rule of private desire we see monstrously enacted in the civilization that is up to now created. Is it a marvel that, viewing what intelligence, as the servitor of the passions, has made of society, we should look wistfully backward to the moralless innocency of the first state of the soul? And seeing whither we are come, having

discovered that under the leadership of private feelings, which not pity itself can universalize, society is being perverted, is there no further discovery of a nature in man that can set his feet upon the pathway of perfection?

This is essentially the question which is put by Rousseau's two Discourses. It is also the measure of their reputed pessimism, which is really no pessimism at all; for Rousseau is throughout an intense advocate of human merit—of the value of the moral instinct, of the natural goodness of man, of the efficacy of human reason. He has, however, presented but one side, the individualistic side, of human nature; man is not merely private, he is also social and political in his nature; and it is in the analysis of our political nature that the corrective for the excesses of private indulgence of private passions must be found. It is to the task of discovery that the *Contrat social* is devoted; in its theories the complementary element is defined and human nature is, in idea at least, shown normally whole.

The theory of a contractual organization of the first polities had been advanced by Hobbes as a justification of the indefeasibleness of the powers of the sovereign, abjured by the contractors in their act. By Locke a like theory had been used as a sort of charter of rights, pertaining to men by nature good and reasonable, who by their contract reserved to themselves intact their natural liberties. It was employed by Rousseau, mythically (for with him the compact was clearly not conceived as an historical event), in a very different sense: as a convenient and vivid figure by which to express that society is at once deliberate and mutual in character, the creation of rational beings endowed with an *appetitus societatis* (no mere gregarious instinct, but a political sense). In the Second Discourse Rousseau speaks of the research into the nature of "the fundamental pact of all government" as yet to make, provisionally stating that in character it is a voluntary obligation to observe laws. The *Contrat social* is the obvious carrying on of this research, directed to the discovery of some principle of the unification of "what law permits and interest prescribes, to the end that justice and utility be found not divided." More particularly, the problem of the contract is: "To find a form of association which defends and protects with the whole force of the association the person and the goods of each member, and by which each, uniting with all, obeys only himself, and remains as free as before."

The solution of this problem is found in the doctrine of the *volonté générale*[3] and of its primacy with respect to the particular

[3] Vaughan points out (Vol. I., pp. 423–33) that Rousseau probably owes the suggestion of the idea of the general will to Diderot's article in *L'encyclopédie* on "*Droit naturel,*" here reprinted.

will of the individual. The terms of the contract reduce to: "Each of us mutually places his person and all his power under the supreme direction of the general will; and as a body we receive each member as an indivisible part of the whole." Thus is formed the body politic, which by this very act gets its unity, or *moi commun*, its life and its will. Passively conceived, it is a state; actively, a sovereign; as compared with others, a power. The associates are collectively a people; as sharing its sovereignty, citizens; as under its laws, subjects. The act of association is thus a reciprocal engagement of the public with all its members, each individual holding a double relation: he is a member of the sovereign with respect to individuals, a member of the state with respect to the sovereign. The authority of public deliberation rises directly from these relationships, but it does not extend to a control of sovereignty itself, which can not impose an unbreakable law upon itself; even the social contract has no sanction save its own sanity. Further, the sovereign can have no interest contrary to the best interest of its members, for which reason it has no need of guarantees from its members. It *is* their collective interest. Individual men may have individual wills opposing the general will (in which as social beings they participate); and this, of course, is destructive to the body politic. Hence, that the social pact be not vain, it belongs tacitly to the engagement that force may be used to compel obedience—*"ce qui ne signifie autre chose sinon qu'on le forcera d'être libre."*

Law is the formal expression of the general will (which, because it is general, necessitates that all laws be universal in form and intent). "When the whole people decrees for all the people, it considers only itself; and if a relation is then formed, it is of the entire object from one point of view to the entire object from another point of view, with no division of the whole. The matter of enactment is then general, as is the will which enacts. This act I call law." In short, laws *"ne sont que des registres de nos volontés"*; and any state ruled by laws (that is, general rather than individual will) is thereby republican in genius. In a passage of the *Économie politique* Rousseau says: "There are two infallible rules of conduct . . . the one is the spirit of the law, which should serve in the decision of a case which has not been foreseen; the other is the general will, source and supplement of all laws, and which ought always to be consulted in default of them." This is clearly the principle in accordance with which democracies grow.

It is an easy matter to misinterpret Rousseau's doctrine of the general will, especially in the direction of collectivism. In the first place, there is nothing mystical or emotional about it; it is thoroughly rationalistic. The *moi commun* is never a "mob soul" nor is

it ever the "self" of an "over-individual state"; and the *volonté générale* is always a true will, the result of a rational choice and the expression of a conscious responsibility; in this Rousseau is a follower of Dante and Milton and the Christian theologians. In a significant passage of the first draft of the *Social Contract,* its author says: "The general will is in each individual a pure act of the understanding which reasons in the silence of the passions as to what man should demand of his fellows and as to what his fellows have a right to demand of him." At the close of the First Discourse Rousseau had said that the voice of conscience, teaching the Right, must be heard "in the silence of the passions." In the course of the Second he had ascribed to the species even more than to the individual that power of free choice which is the essence of reason and the source of human perfectibility. In the first draft of the *Social Contract* he had stated—following Locke—that the law of nature (as applied to man) is the law of reason. Finally, in the authorized version of this document, he comes to the conclusion that natural liberty, which has no bournes excepting the powers of the individual, is no true liberty; true liberty is civil liberty, limited by the general will. Here is moral freedom, based on self-control; and in truly Platonic phrase he adds, "the impulsion of appetite alone is slavery, while obedience to the law which one prescribes for oneself is freedom." Self-prescription of law is political sanity, and in a passage behind which surely stands the image of the Socrates of the *Crito,* Rousseau tells how a man, as citizen and sovereign, inflicts upon himself the punishments which, as erring man, he has incurred under the law.

The change from the natural to the civil state means the enthronement of reason. But are there advantages in this change? Yes, says Rousseau; duty replaces impulse, right succeeds appetite, reason rules inclination, and the whole *good* of human nature receives new possibilities of development. "Instead of destroying a natural equality, the fundamental pact substitutes a moral and legitimate equality for the physical inequality with which nature endows men; and while capable of inequality in force or genius, they become equal by convention and right." "If one ask in precisely what consists the greatest good of all, which should be the end of all legislation, it will be found to reduce to two prime objects, *liberty* and *equality.* Liberty, since all particular dependency is but so much power taken from the body of the state; equality, because liberty can not subsist without it." Here we are back again to classical grounds, moving in the thought of Plato and Aristotle. The good is the sovereign, and the sanction and instrument of the good is that faculty of reason which first makes men of us, and, in freeing us from the rule of passion, makes us truly free.

Classical, too, is the optimistic view of human nature implied in the doctrine of perfectibility. The first part of the earlier Discourse opens: "It is a grand and beautiful spectacle to see man issue, as it were, from naught by his proper efforts, dissipate by the light of his reason the shadows in which nature has enveloped him, elevate himself above himself, mount in the ardor of his spirit even to celestial regions, traverse with a giant's pace, like unto the sun, the vast expanse of the universe, and finally, what is yet greater and more difficult, enter within himself in order there to study man, to know his nature, his duties, and his end." The latter phrase, the study of man, represents Rousseau's conception of his own task: in its execution he probed and condemned the unbalanced leadership of passions and ambitions; even when these lead to the development of science and art and the establishment of polities, they are not comparable in goodness with simple virtues; the good that is the realization of right human living must come through the cultivation of the powers of understanding, at once impersonal and universal. With a soundly Gallic sagacity Rousseau saw that the "general will" is founded in understanding of affairs, what the Greeks called *phronesis*—a something much nearer to our "common sense" than to the thing we name "public sentiment"; and he saw, too, that there must be back of this, as its ultimate sanction, a faith in the powers of men to achieve their own good, and a universe which justifies this faith. In this sense he was spokesman of the rationalistic belief in human progress which was characteristic of his century, and which found its perhaps supreme expression—if but for the reason that its author was, when he wrote, a proscribed and hunted man—in the words of Condorcet: "In past experience, in observation of the progress so far made by science and by civilization, in the analysis of the march of the human spirit and of the development of its faculties, we find the most powerful motives to believe that nature has put no term to our hopes."

V

Rousseau closes the *Contrat social* with the brief announcement that the external relations of states constitutes a subject too vast for his short life. There is evidence (discussed by the editor in a note) that he did, however, outline a work on federation, and that the manuscript of the outline was destroyed by a friend to whom he had committed it. For such notions as we have as to Rousseau's theories of international relations we are confined to stray passages of his published works and to inferences from the general character of his political philosophy.

But the study of even this meager material is not without re-

ward. In the first place Rousseau regarded the republic as the highest form of state, and he regarded it as essentially a form adapted to the small state; he is, therefore, quite with the Greeks in idealizing the small democracy, or aristodemocracy (to borrow a new term). In the ideal state every member should know every other member: that is the formula, which, with attendant qualities, is expounded in *Contrat social* (II., x), and with greater length and picturesqueness in the dedication to the Second Discourse. The dedication is to his native Geneva, and to certain passages of it our own day has replied with a cruel irony: "I would choose," says Rousseau, "for my nativity . . . a country deterred by a happy powerlessness from the ferocious love of conquests, and guaranteed by a position yet more happy from the fear of itself becoming the conquest of another state; a free city, placed between several peoples among whom none has interest in invading it, while each is interested in preventing its invasion by others. . . . Whose citizens, therefore, if they follow the exercise of arms, do so rather to retain among them that warlike ardor and fiery courage which sit so well with liberty and nourish the taste for it, rather than from any necessity of self-defense"—altogether such as yours of Geneva, whose happiness is assured; for "honorable treaties fix your limits, assure your rights, and safeguard your repose." With Belgium and Servia under their eyes, the men of Geneva to-day can hardly share their townsman's confidence![4]

Not every state is physically adapted to the ideal form. The true size of a state should be determined by the relation of the population to the possibilities of nourishment afforded by the territories, not merely by census or square miles. There is in every body politic a maximum of power which it should not pass, and from which it often departs in growing in size. The relation of population to food

[4] It should be noted that while Rousseau's ideal of the *feasible* republic is of the small state, yet the conception of a republican federation of Europe appealed powerfully to him, as a vision. In his *Jugement* upon the *Project de paix perpétuelle* of the Abbé of Saint-Pierre, he remarks that to realize the Abbé's European republic for a single day would be enough to ensure its eternal duration. The real interests of both princes and peoples are in such a federation, but their apparent interests turn sovereigns "away from the empire of Law to submit to that of Fortune;" rulers, like senseless pilots, though they drive their ship upon the rocks, prefer the vain show of commanding their servants, to the safe anchorage; while ministers must keep their princes embroiled to render themselves necessary—choosing to lose the state, if need be, rather than their positions. Thus, though the project of the Abbé is wise, his means of executing it issue from the simplicity of his heart. "He honestly imagines that it is only necessary to assemble a Congress, and there propose his Articles, in order that they should be signed and all would be done,"—which is to judge as an infant. Rousseau's *Jugement* abounds with caustic phrases pertinent to our day.

supply is the true measure of this maximum power. The vigor born of good government rather than the resources furnished by a great territory is the source of welfare. Every people so placed that its only alternatives are commerce or war is weak in itself. "There have been states so constituted that the necessity of conquest entered into their very constitution, so that to maintain themselves they were forced to expand unceasingly. Perhaps they have even felicitated themselves on this happy necessity, which showed them, moreover, with the term of their aggrandizement, the moment of their inevitable fall." In the fragment of *L'état de guerre,* Rousseau outlines a kind of law of compensation between states, tending to equalize large and small: "It is necessary, in order that a state subsist, that the vivacity of its passions supplement that of its movements, and that its will intensify as much as its power relaxes. It is the law of conservation which nature herself establishes among species, maintaining them all, in spite of their inequalities. It is also, to speak in passing, the reason why small states have proportionally more vigor than large ones. For public sensibility does not increase with territory; the more this extends, the more the will weakens and movements become enfeebled; and the great body, surcharged with its own weight, sinks languidly into decay."

It is worth remarking that the biological analogy employed here and so generally by Rousseau is not with him a source of self-deception: he is too sagacious to surrender his imagination to the delusion that the life of a nation is but the life of an individual writ large—a delusion horrible in its consequences when those who suffer from it conceive it to be their duty to strike down the senescent elders whose heirs they conceive themselves to be. It is true that in the *Économie politique,* after refuting the notion that the nation is a larger family, Rousseau draws a Platonic likeness of it as an organism—animal body and members; but in *L'état de guerre,* he makes no less explicit the difference. Man, the animal, is fundamentally independent of his similars; the limits of his growth are fixed by nature; his life is short, his years are counted, and even his passions have their measures. The state, on the contrary, is an *artificial* body (which means that it is artificed and sustained by human reason); it has no determined measure; its growth is indefinite; and, indeed, its safety demands that it outgrow its neighbors. "The inequality of men has bournes set by the hand of nature; that of societies can grow endlessly until the one shall have absorbed them all."

This is the source of monstrosity in states, and above all of the monstrosity of war. Rousseau leaves us in no doubt as to war: it has in it nothing natural and nothing reasonable; it is wholly monstrous. In the brief treatment in the *Social Contract,* he tells us that war is

"a relation of things, not men," a relation "in which individuals are enemies only accidentally, not as men, nor even as citizens, but as soldiers; not at all as members of a fatherland, but as its defenders." The paragraph in which this theme was to have been developed in *L'état de guerre* was apparently not written, but the definition of war which he does give is quite in harmony: "War of Power with Power" is "the effect of a mutual, constant, and manifest disposition to destroy the enemy state, or to enfeeble it by all possible means; this disposition reduced to act is war proper; when it remains without effect it is only the state of war." The important point is that war is essentially a relation of powers or states, and that its animosities are (or should be) directed only to the injury of such artificial bodies—never to the destruction of men as human beings.

Rules of conduct of war follow from its nature. War gives no rights not necessary to its end. "In open war a just prince seizes all that belongs to the public; but he respects the person and the goods of individuals: *he respects those rights upon which his own are founded.*"[5] It may be imagined that Rousseau gives short shrift to the "might makes right" formula: all it can mean is the annihilation of right.

And here we are brought again to the fundamental note upon which the whole of Rousseau's thought turns. Right is somehow elemental, not perhaps in man as man, but certainly in man as humane. It is the true expression of man's political nature, and no polity which balks its expression is good. By its nature, as founded in reason, it is capable of defeat or perversion; but properly nurtured it is the greatest of blessings vouchsafed mortals; compared with the man who is in the highest sense politic, the moralless natural man is vacantly brutish. "The passage from the state of nature to the civil state"—there are few passages in Rousseau finer than this—"produced in man a very remarkable change, substituting in his conduct justice for instinct, and giving to his actions the morality which hitherto they had wanted. It is then only that, the voice of duty succeeding to physical impulse and right to appetite, man, who up to then had regard only for himself, found himself forced to act upon other principles, and to consult his reason before listening to his inclinations. Although in this state he deprived himself of many advantages which he held from nature, he gained others so great—his faculties developed, his ideas broadened, his sentiments ennobled, his whole soul elevated—that, if the abuse of this new condition were not often to degrade him below that whence he had issued, he ought to bless without ceasing the happy moment

[5] *Contrat Social*, I., iv.; italics mine.

which had seized him up once for all, and, from a stupid and limited animal, had made of him an intelligent being and a man."

Rousseau, like Dante, saw in the State a source of salvation; but with Rousseau this salvation must be won, not by miracle from above, but by grace of human reason and the sense of right: and to the fatherland which encourages the exercise of the one and insists upon the responsibilities of the other, he felt that the citizen should return every service of patriotism. I must be forgiven one more quotation, because it is so splendidly pertinent to our day and hour: "We begin properly to become men only after having been citizens: whence may be seen what should be thought of those pretended cosmopolites who, justifying their love of country by their love of humankind, vaunt love of the world in order to obtain the privilege of loving no one."

VI

In the cycle of thought Rousseau's position stands clear. He is a humanist and a rationalist, and in genius he is nearer akin to Plato and Aristotle than to any other thinker. Because he is a humanist, he is a democrat; but his rationalism leads him to avoid the great pitfall of democracy—individualism of passion and desire. Like other democrats of his time, he stands for the rights of man; but the man he has in mind is the political man, whose right is in the exercise of his reason. It is in reason (not in passion) that men have a life in common and a common will directed to the ends that reason defines. This community (let me repeat) of self and will—*moi commun, volonté générale*—is no mystical or sacramental spirit from the skies: it is something that belongs to each man in severalty, by reason of that participation in the work of society which develops his own social powers. And Rousseau is quite as indifferent as Plato to the actualization of Utopia; if the society be such as to give the citizen a vision of the ideal city—so that he can order his own house after the manner of that city—it will have achieved its high purpose. The society which does this, which reveals to the actual citizen an ideal citizen whose conduct can be the pattern of his own, is the essential democracy.

The ideas of Rousseau have inspired much in political thinking and not a little in conduct. Have the possibilities of his teachings been exhausted? A slight examination of the progress of democracy will instruct us. In the century and a half since Rousseau's day, democracies have multiplied in number, but they have not deepened in understanding. In many particulars the development has been away from a rational individualism and in the direction of an anarchic individualism. Hedonism in ethics (in its utilitarian form) has

become well-nigh universal; and hedonism, which makes of feeling the good, is utterly destructive of rational morality, and hence of a polity whose genius is right. Even more perniciously irrational (since it is the covert support of all hedonism) has been the doctrine of *laisser faire,* as applied to society. Two great and gratuitous assumptions—of the beneficence of free competition in the economic world and of the beneficence of a free struggle for existence in the biological world—have made *laisser faire* theories seem plausible. But the law of supply and demand and the law of the survival of the fittest are both mechanical; both, therefore, persuade to the abrogation of the reason. To what depths of immorality the latter law can lead, the orgies of *Machtpolitik* in our own day reveal. Undoubtedly, the underlying optimistic belief in the inevitableness of human progress toward the good, born with the eighteenth century and carried over through the nineteenth, is what has made these assumptions so convincing. Rousseau, at any rate, suffered no illusion on this point; he saw with perfect clarity that the agencies which may lead to human betterment, not only can contribute, but too often have contributed to man's debasement: only by diligence of the reason can we save ourselves from the peril.

In yet another particular we have missed a truth which Rousseau saw. It is quite apparent that the Enlightenment, in the flush of its humanitarian zeal, over-emphasized native human goodness. This was a not unnatural reaction from the elder theological condemnation of man. To us (booked in anthropology) there is more humor than poetry in eighteenth-century vignettes of poor Lo; but it is hale to recall that in a preceding century Paul III. felt it necessary to issue a bull proclaiming that American Indians are men, and not brutes. Under nineteenth-century scrutiny the image of the Arcadian savage has dissolved, and, indeed, doctrinaires of evolution have swung the pendulum too far, picturing primitive man as worse and lower than he probably merits. But evolutionary teaching has left him at least *in potentia* humane, and it is on this potentiality that we have erected a humanitarianism that is mawkishly false. It is directed not only to every *kind* of man, but to every individual, no matter what his case; and it is occupied with the prepossession that the world, in some sort, "owes" to each individual his measure of private gratification. This is what democracy is commonly understood to stand for. Rousseau, with his conception of the rigor of duty, and, before all, with his understanding that society exists not for the individual mortal, but for the type of citizen—with this understanding, is clearly but of such webs of sentimentality. His response to the issue is again an exhortation to the reason, which

makes of law an expression of the universal and generalizes the will itself.

Clearly Rousseau's polity has no more been tried out than has Plato's—which it so resembles. But for us to-day—in a welter of thought hardly less tragic than is that of events—there is an imperative question, upon answer to which hangs the possibility of moving further in the direction of democracy. Is the humanitarian view metaphysically true? Can reason be trusted? Is human morality and right more than illusion? There is a great sector of humanity fighting squarely in the negative belief, still asserting the ancient contention that there is no help save in divinity and no right save the divine right of the chosen. For us who have grown up to abhor this belief it is easy to refute it with prejudice; but the only refutation that can be lastingly persuasive must come through the discovery, by democracies, of a means to rear a rationally intelligent citizenship, each member thereof patterning after the universal model which their combinedly instructed wills shape for all.

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REVIEWS AND ABSTRACTS OF LITERATURE

An Elementary Laboratory Course in Psychology. HERBERT SIDNEY LANGFELD and FLOYD HENRY ALLPORT. Boston and New York: Houghton Mifflin Co. 1916. Pp. xvi + 147.

The authors are to be congratulated on having carried through their plan exceedingly well. It is perhaps regretable that it should be necessary to attempt to cover the field of experimental psychology in one semester, but since conditions seem to demand this, a clearly written manual like the present one is very useful. A feature of the book which commends itself is the possibility of performing all of the experiments without elaborate or expensive apparatus. The authors have been really conscientious about this; even the poorest of colleges can surely afford the equipment indicated.

Other aims of the authors will not so readily recommend themselves to all prospective users. It seems, for example, to be assumed that the experiments are to be performed without accompanying lectures or class-work, though this is nowhere explicitly stated. At any rate, the entire "half course of five hours a week" is surely required merely "to perform all the experiments," seventy-five in number. The experiments are indeed so simply explained that they *can* be performed without accompanying lectures, but it seems doubtful if the maximum of results is thus attained. Certainly if there is to be

no class-work, the supplementary reading (very wisely omitted from a laboratory manual) must be carefully chosen and faithfully done. That the latter will be the case is a large assumption.

Instructors desiring to get in one lecture a week can, of course, omit some of the experiments. This raises, however, a point of some importance. The authors present us, not with a "source book" of experiments, but with an articulated *course,* one in which the balance between subjects is really admirable. With few exceptions, to drop any of the experiments would be to destroy this balance. For the practical laboratory use, for which it is designed, you must take it or leave it, as it stands. Instructors who want to put a usable manual in the hands of their students are unlikely to find one more to their liking—till they write one themselves.

While the experiments are not of equal length, a general notion can be gained from their number of the relative time spent on each subject. Nine experiments are devoted to vision, four to audition, the same to smell and taste, the somewhat disproportionate appearing number of twelve to touch and the dermal senses, two to the kinesthetic senses, two to Weber's law,—making 33 experiments in sensation. Eleven are given to the perception of space, four to the perception of time, and six to the perception of words and meaning. These latter are tachistoscopic experiments of a familiar type, but well worked out; and since they are practically all experiments in attention as well, two more suffice for that subject. Two experiments each are devoted to reaction times, association, rote memory, logical memory, and recognition and discrimination. Three are given over to the learning process and three to imagery. As in all other manuals, affection, with five experiments, is least adequately treated. It is satisfactory to note in the technique of several experiments, the influence of the experimental thought psychology, which having won its way into the text-books, seems now to be finding its way into laboratory courses.

To criticize details would only serve to emphasize how few need it. It is perhaps worth while to point out that the formula for correlation (p. 102) yields not r, the correlation index, but ρ which stands in constant relation to it. The preference for the method of minimal changes is rather excessive, but most instructors, I fancy, will welcome the concise directions as to the treatment of results and the suggestions for tabulation. Well chosen questions are appended to each experiment.

At one point only does the reviewer find himself in staunch opposition to the authors' general treatment. That is in regard to introspection. They advise it, nay, prescribe it, in nearly every experiment, but nowhere is any help afforded the student in his

practise of introspection. Now introspection is an art which can be taught like any other and which can not be properly performed, even by those of native talent in that direction, without guidance and training. The behaviorist's case against introspection is so strong precisely because psychologists are only just beginning to realize the need in their art as in any other of definite canons. In this one point, the manual is neither fish, flesh, fowl, nor good red herring. If the behaviorist throws all introspective data out of court, the psychologist, as such, has no more to say than to any other biologist. Indeed as one who realizes its imperfections all too well, he should sympathize with the impatience of his fellow scientist. But if we are to be *psychologists,* let us train our students in the accurate observation of psychological data, *i. e.,* in introspection. Whatever we do, let us not assume that they will "pick it up" as a chicken picks up corn, instinctively.

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The Morals of Monopoly and Competition. H. B. REED. Menasha, Wis.: G. Banta Publishing Company. 1916. Pp. 143.

The purpose of this small volume is to show in a concrete way the conditions and practises that have brought about the application of new moral standards to our judgments of monopoly and competition. The methods by which large corporations have gained control are shown in detail and the assumptions in Adam Smith's doctrine of a "natural price" are pointed out. Judicial decisions are quoted and arranged in an interesting way so as to show the gradual shift in the prevailing point of view. The more recent decisions take into consideration "not only the concrete situations in which the laws in question function, but also their concrete effects upon society. It is this which reveals to them that a difference in magnitude makes a difference in kind and that a changed situation demands a new rule. This is not derived from *a priori* and syllogistic reasoning, but is made evident by inductive reasoning from experience, from facts of observation" (p. 122). The new criterion is that of public interest, a concept which, as the author says, requires further analysis, but which he does not attempt to define vigorously. The book, however, offers a clear and simple statement of the significant change that has occurred in our attitude towards "big business" and presents a forceful argument for the view that "morals are group habits formed to meet the requirements of a particular situation and are right, or function satisfactorily, when they satisfy the wants of the group in that situation. If a conflict arises, we should discover the conditions out of which it arose, find out how the old

system of morals originated, analyze the situation in which it functioned, and find out the elements which made the old system satisfactory, analyze the new elements in the changed situation which impair the usual functioning of the old morals, then project an hypothetical solution, keeping the good of the old system as much as possible and making changes only for the new elements, and, finally, try out the proposed solution in a practical way" (p. 119).

B. H. BODE.

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JOURNALS AND NEW BOOKS

JOURNAL OF EXPERIMENTAL PSYCHOLOGY. February, 1917. *On the Measurement of Visual Stimulation Intensities* (pp. 1–33): L. T. TROLAND.—Various meanings of the term intensity are mentioned; fundamental significance of photometric and radiometric measurements is considered; relation between radiant energy and light is discussed. Fundamental presuppositions of a method of photometry and recent studies of the method of flicker are discussed. The influence of pupillary size upon the illumination of the retinal image, and the artificial pupil are mentioned. The *photon,* unit of physiological stimulus intensity, is offered as a basis for the general standardization of conditions of visual experimentation with regard to intensity. *A New Method for Measuring Reaction Time* (pp. 34–40): F. E. AUSTIN.—Electromagnet reaction times at make and break are different, and there is considerable variation in the reaction times at make. This causes a variable error in the results. The method for measuring reaction time described is based upon the fact that the arc produced by an alternating current between two electrodes is set up and extinguished twice during each cycle of alternations and also upon the accuracy with which the frequency of an alternating current may be indicated and observed by employing a so-called Frahm frequency meter. The image of the alternating arc may be focused upon a photographic plate, and the plate exposed while it is rapidly moved laterally in the focal plane. The more rapid the motion of the film, the longer are the impressions of the dashes made by the light, and likewise the greater the distance between the light dashes. After sufficient records have been made to occupy the width of the film, and the film is removed and developed, blue prints may be made for purposes of reference and computations. Records are evaluated by counting the number of complete dashes and measuring the fraction of a dash. *Visual Discrimination of*

Rectangular Areas Illuminated by Varying Degrees of Achromatic Light (pp. 41–62): G. F. ARPS.—The object is to determine the discriminative efficiency in the perception of areal differences and to analyze the various factors involved in the judgments. *Auditory Illusions of Movement—A Preliminary Study* (pp. 63–75): H. E. BURTT.—The presentation of two faint similar auditory stimuli in quick succession a few centimeters apart yields, under certain conditions, an impression of a sound moving in the direction of the actual temporal succession of the stimuli. *A Comparison of Deaf and Hearing Children in Visual Memory for Digits* (pp. 76–88): R. PINTNER and D. G. PATERSON.—Oral pupils are superior to manual pupils on the average. Auditory experience plays an important part in the efficiency of both hearing and deaf individuals in visual memory for digits. *A New Complication Apparatus* (pp. 89–91): KNIGHT DUNLAP.—An instrument which is expected to give ease and accuracy in setting a discrete stimulus in its proper place and such that the discrete stimulus would not vary in intensity with the rate of rotation is described.

Bernheim, H. Automatisme et Suggestion. Paris: Librarie Félix Alcan. 1917. Pp. xv + 168. 2 fr. 50.

Calkins, Mary Whiton. The Case of Self against Soul. Reprinted from *The Psychological Review,* Vol. XXIV., No. 4, July, 1917. Pp. 278–300.

Calkins, Mary Whiton. The Persistent Problems of Philosophy. Fourth Revised Edition. New York: The Macmillan Company. 1917. Pp. xxvi + 577. $2.50.

Hollingworth, H. L., and Poffenberger, A. T., Jr. Applied Psychology. New York and London: D. Appleton and Company. 1917. Pp. xiii + 337. $2.25.

Roberts, W. R. Greek Civilization as a Study for the People. Oxford: Oxford University Press. 1917. 40 cents.

Williams, C. D. The Christian Ministry and Social Problems. New York: The Macmillan Company. 1917. $1.00.

NOTES AND NEWS

LETTER FROM PROFESSOR BREESE

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS:

I BEG permission to correct an error in Figure 29, opposite page 48, of my text-book of Psychology recently published. The lower and smaller blue area near the hippocampal convolution should be in

purple instead of blue. The error was made in the process of engraving and was discovered by the publisher only after the first lot of books had been issued. The proper correction has been made for all future issues.

Very truly yours,
B. B. BREESE.

UNIVERSITY OF CINCINNATI,
September 29, 1917.

THE committee appointed by the president of the American Philosophical Association to arrange for a discussion at the coming meeting has voted, after much deliberation, to present the topic, "Ethics and International Relations," without subsidiary topics. As leaders of this discussion the committee has selected Professors J. H. Tufts, Felix Adler, W. E. Hocking, and H. A. Overstreet. Professors Montague and De Laguna have been selected by the committee to continue the discussion of last year as formulated in the following questions:[1]

A. Is the division of the entities present or involved in experience into two reciprocally exclusive classes of "mental" (or "psychical") and "physical" to be retained?

B. If so, how is the distinction to be formulated? In particular what is the essential differentia of the class "mental" or "psychical"? Are the entities denoted by its attributes, "aspects" or relations of things which at the same time may possess the predicate "physical"; or are they a class of existing things which can never possess the attribute "physical"? What, specifically, are the entities denoted by the term "mental"? And how, if at all, is their existence to be established?

THE following appointments have been made at the Carnegie Institute of Technology: Beardsley Ruml, instructor in psychology; G. M. Whipple, professor of applied psychology and acting director of the bureau of salesmanship research for the first half-year; A. J. Beatty, research assistant. L. L. Thurstone has been promoted to an instructorship in psychology. W. D. Scott will remain at the Institute during the coming year.

[1] For a full analysis of these questions see this JOURNAL, Vol. XIII., p. 574.

Vol. XIV, No. 23. November 8, 1917

THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

SCOPE, METHOD, AND PSYCHOLOGY IN ECONOMICS[1]

IT is probably true that the last word in economics will be said only after the last work has been done in philosophy or in psychology or in both. Equally clearly, however, must a finished philosophy or psychology await the completion and perfection not only of economic science, but of pretty much all science at large. Another thing, however, is it to say that any science must postpone its beginnings until some other or all others shall have achieved perfection. It seems indeed certain that, if there can be no political economy till all the issues of psychology are settled, there can never be any political economy at all.

But it is none the less unfortunate that the economists themselves give no promise of arriving at even a factual and descriptive statement of what their central problem or concept objectively is. No matter how modest as aspiration or simple as task the thing on the face of it may appear to be, it yet is indefinitely far withdrawn from immediate prospect. Not often, in truth, does any economist succeed in so far arriving at peace with himself as to avoid confusions of the relational with the non-relational meanings of *value*. Instead, his usage is prone to range through all the various steps and varieties of meaning—from utility, through marginal utility, subjective appraisal and comparative appraisal—and reaches its farther terminal in the objective fact of exchange relations as expressed in the market and made concrete in price. It does not then lie with any economist to complain that in other fields of thought in which the same term is domesticated the same confusions appear. To economics can belong neither the exclusive use of the term nor the exclusive exploitation of its confusions. It is, however, mainly at the charge of the economists that ethical values and

[1] Henry Waldgrave Stuart, "Phases of the Economic Interest" in *Creative Intelligence*, pp. 283–313. New York: Henry Holt and Co., 1917. Warner Fite, "Moral Valuations and Economic Laws," in this JOURNAL, Vol. XIV., p. 5. J. Viner, "Some Problems of Logical Method in Political Economy," in *Journal of Political Economy*, Vol. XXV., No. 3, March, 1917.

esthetic values and nutritive values are constantly asserted to be at one in ultimate principle with economic values. Clear thinking requires that merit be held clearly distinct from comparative merit, that things be recognized not only as beautiful, but as beautiful in varying degrees, that foods be thought of not solely as all nourishing, but as more or less nourishing relatively to one another. If, then, it be the economist's problem to explain the objective *relations* of exchange between things, and if these relations receive expression as economic *values,* and if also a technical term should mean always not more than one thing and always the same thing, it should follow that only in the sense of desire or approval or hunger, utility or worth or appraisal, or emphasis or significance, can the value phenomenon offer common ground between economics on the one side and ethics or esthetics or dietetics on the other. These other sciences may, for their purposes, spread the term *value* over any or all of their non-comparative data, or may even, if it so please them, remain in perpetual flux between notions of merit and of relative merit, between ugliness separately considered and ugliness regarded comparatively, or between digestibility viewed as an absolute chemical fact and viewed as merely the expression of the relative ease of digestibility of different foods. But if value is to mean to the economist merely relations of exchangeability, it should mean solely and always this one thing, connoting always the idea of rate or ratio; or, if this be overmuch to ask of frail human thought, the term *price* should be substituted for *value* wherever the objective facts of the relations of goods in the market are to be expressed. This would mean the abandonment of the term *value* to the uses of the other sciences to make whatever best they should be able out of its various vaguenesses.

Little, however, of this protest or aspiration or admonition can rightly refer to Professor H. W. Stuart's admirable and suggestive "Phases of the Economic Interest." While his essential problem is formulated as the process of *valuation,* value is to be understood as connoting with him what the economists have in recent years been fairly well agreed in calling *utility.* His purpose is to render an adequate account of the psychology of desire: Why do we want particular things? On what basis do goods attract us in such fashion that they come to be desired by us as objects between which selection must take place and choice be declared?

Note that the problem is, therefore, not precisely the psychology of *choice,* the way in which we relate things to one another in the making of our purchases, but rather the way in which they come to be objects of desire for us in such sort that we may relate them and select or choose among them. It is thus that, in Professor Stuart's

view, the field of economics widens, in this aspect of it, to include not merely desires for food, clothing, and shelter, but all aspects of esthetic and ethical appreciation. It follows that he allows short shrift to all varieties of hedonism as purporting to offer an account of the actual process of desiring. Doubtless one may desire those things on the control of which in his experience certain advantages have been found to depend, though even here, perhaps, the fact that the advantage achieved—that he turned out to like what he got—leaves the attendant satisfaction not so much explaining the desire as the existence of the desire explaining the satisfaction. But in any case, the quest of pleasure or even of gratification is no adequate account of human desires and strivings. Not only is much of our desiring instinctive or habitual or impulsive rather than reflective or calculative, but these desires are themselves undergoing development; each one of us, therefore, is always in the process of becoming, for the purposes under examination, a new man, the desire itself undergoing modification by the very fact that during the process in which we are relating desires and are thus arriving at selection and choice between them, the opposing terms of the choice achieve new definition and new meanings.

It is, therefore, the process of "constructive comparison" to which Professor Stuart calls especial attention. The choice between alternative purchasable things may involve—in some measure, I suppose, always does involve—"alternatively possible systems of life and action. . . . Each system may be criticized and interpreted from the standpoint of the other, each may be supplemented by suggestion, by dictate of tradition, and by impulsive prompting, by inference and by conjecture. Finally in experimental fashion an election must be made" (p. 348)—with possible further modifications of the desires involved and of their relations to one another.

And more than this: among our different desires—the different interests by virtue of which we act and in the furtherance of which we make these constructive comparisons leading to choice—must be included our desire to become men of new levels of desire and of interest; else why try to learn to like olives, or spend so great efforts to become interested in music or in art, or to form new acquaintances or friends? Facts of this sort illustrate the larger generalization that human beings desire *novelty,* something of which past experience can not in any ordinary sense have discovered the advantage or fixed the desire—desires for something that, never having known, we can not have enjoyed—the new, the untried, the unexpected. "But the *impasse* is conceptual only;" we do know the new things to the extent of knowing them in this aspect of their newness. In any other aspect they are indeed unknown. But still we know that,

among the things that have been known only in this aspect of newness and strangeness, many have later achieved significance for us—the more, perhaps, that they were new and strange. Thus novelty comes to be desired in its own right. The aspiration to be different men, to achieve a new plane of interests or of ethical or esthetic standards, is merely one expression of the fact that we are human beings in an unfolding process, and that the inexperienced falls within our range of desires.

Nothing of this need arouse protest. For my own part I accept it all, insisting solely that clarity of economic analysis becomes impossible if we have to regard as *values* the items between which choice must be declared—if, for example, it is to be asserted that "we have not chosen the new because its value, as set beforehand, measured more than the value of the old, . . . the old . . . worth less" (p. 348); and emphasizing also what seems to me the obvious truth that "there are apparently no valid objections to this view to be drawn from the logical type of marginal utility analysis" (p. 349). Nor, under similar reservations, need there be dissent from Professor Stuart's next and most important position: "The issue finally at stake in any economic problem of constructive comparison is an ethical issue. . . . A price agreed to and paid makes a real transition to another level." From our dead selves we move to higher—or lower—things. We do not desire anything in separateness from other things, but to go along with them; therefore every choice is measurably a choice between competing systems of living—therefore is ethical in the non-relational sense, a "valuation" of each separate system, the two together providing a basis for that relative valuation fundamental to a declaration of choice between the competing items or systems. There are, then, no choices so trivial as to fail of an ethical aspect, if only we come into the consciousness of all the relations, the reactions, and the implications. Nothing is neutral to him who lives always in the presence and service of God, or is always seriously intent on the direction and meaning of his own development.

Precisely, therefore, because there is no man acting always in economic affairs in strict conformity with egoistic or selfish or hedonistic principles, and because human desires, reaching out toward objective things, contain always or often these admixtures of adventurous or ethical interest as well as of impulse and instinct, the economic analysis which fails to allow for the complexity and variety in human motivation becomes either a gross caricature or a futile abstraction. *Utility,* as the mere expression of desiredness, requires still a new psychology behind it to explain it. The ethical is not to be regarded as distinct from the economic or as antithetical to it, but as inseparably part and parcel of it.

Thus artistic and religious and ethical interests fall within the economic field, else paintings, altar candles, and charity hospitals would have to fall out. A psychology for human beings as they are and as they actually desire and choose is necessary to an economic science which shall report things as they actually take place.

All the foregoing would readily command general acceptance—my own included—if only the authority of another brilliantly capable philosopher and psychologist, Professor Warner Fite, were not—at least in seeming—directly opposed. To Professor Fite whatever is ethical is not economic, or, more precisely, in whatever degree it is ethical in that degree it is not economic. That the phenomena of actual life range at all points between these two opposing extremes or poles amounts almost to saying that there are nowhere any purely economic phenomena, nowhere any facts which, tried by descriptive and concrete tests, the economist can be trusted fully and accurately to report. And all this must be true precisely because men are never, in their economic activities, entirely selfish or ruthless without reserves or limits. In Professor Fite's view, economics is only so far a science—and only dubiously a science at that—as it assumes the consistent selfishness of all economic activity, as it abstracts from all other human interests and motives, not denying their existence, but unable to make anything of them. To that sort of business which is pure business must the business of economics be restricted. So far as any business is something more or less than business at 100 per cent. of purity, it is refractory to economic tests, gets away, escapes, or, if caught, is caught merely to be misinterpreted and misreported.

Thus, while Professor Stuart asserts that all these questionable things are within the economic field, Professor Fite is able to find no economic field excepting on the terms of leaving these disturbing things out. Actually, of course, they are always present. The question for the economist is, therefore, whether to make room for them by seeing them or by not seeing them. I take Professor Fite to hold that only so far as they may be left out—and thus, in truth, not far—can there be any science of economics.

If only the philosophers and psychologists could agree! And so long as they can not or will not, what is there for the economist safely to do? For my own part, I am content to agree with both—in the sense that I prefer a view which dodges these puzzling and complicated issues, committing myself to neither. If this be a running with the hare and a hunting with the hounds I am content, finding nothing else to do short of this deliberate much dodging and brilliantly multiple running. But if nothing can be done with eco-

nomics till all the relevant psychological issues are settled—till the last philosophic word has been said and has been accepted—there must be still 10,000 more years to wait after a first 10,000 years are done. Why, once again, should not psychology wait till we get everything completely and amicably settled in economics? Or physics stand hat off in waiting on chemistry? Or the other way about? Or biology on both? For myself it seems sufficient for immediate purposes—and safe withal, since all the warring schools so far agree —to hold merely that men do desire and do choose. I find it unwise to accept hedonism, but unnecessary to reject it. I am content to forego certain attractive fields of analysis until the scouting squads of these other sciences have made them safe for untechnical wayfarers—the thickets cleared, and all ambushing patrols accounted for. I know it would be far better otherwise—but so it is. Economics, it is true, will never achieve perfection on this basis; but it will never be at all on any other—unless, indeed, there shall be somewhere an economist so near approaching omniscience as to displace within their special fields the authority of the investigators appropriate to them. But a more modest caution would appear to be the more fitting rôle. It is better to swallow no medicine so long as it is a chance if it be not poison. Experience does not always recommend the unknown. If one can manifest no slightest taint of hedonism unless thereby all of his economic reasonings must be declared infect, how shall any one, short of imperative need, dare to take risks with anything either new or old? The fact that any particular view holds the field to-day is the best guaranty that it will have lost it a generation hence. The only view that one could safely tie up with must be some view that is not yet and has never been—something hard to get satisfactory hold of—if, indeed, in any wise it could be discovered. Accepting, therefore, the hazards of the notion that men have desires and of interpreting *utility* to mean nothing more than this mere fact of desiredness by an individual, I find it unnecessary to assume further that all the various influences and all the different processes that lie back of this fact of desire, and that lie back also of all the different desires of different men, are adequately and exhaustively known to me or to any brother economist. Stuart may be right—I suppose that he is—in large part, and as far as he goes, and as subject to later troubles with his brothers of the psychological craft. But I decline to trust these bridges until the structure is better tested, till no man will promptly deny everything else that I think because I do also think some one thing that Professor Stuart thinks. And how can he be sure that he has accounted for all of the things that people, or some people, are interested in, and by which their ways of expenditure are affected? Professor Love-

joy is sure that we are interested in our posthumous selves—not in our destinies in the heaven or the hell whereto we are moving, but in our earthly selves and in our standings and reputations here, where we are not going to be. For do we not aspire to future fame or to kindly recollection? Foolish people we are, some of us, perhaps all of us. Some people, again, are reported to be active in keeping their dead ancestors' ghosts well fed—thus affecting the market demand for current comestibles.

I can assent also to Professor Fite's view that economic laws can have the degree of validity and certainty of laws of the physical sciences only on the assumption that economic phenomena are uncomplicated by choice and agreement. *In this sense of economic law,* "no situation which implies the participation of living human beings can be dominated exclusively by economic law. . . . So far as they move consciously, they are moral agents, so far as they move unconsciously, they are physical facts like any other physical fact; and it is the bare physical fact that lies at the basis of economic law. . . . The opposite of natural law is personal choice or agreement. . . . The economic process is a function not of the world of social consciousness, but of the larger world of social unconsciousness" (pp. 16–17). Only, therefore, when men act, and in the degree that they act, as if they were blind, non-willing, and unmoral items of opaque fact—not necessarily in the strict sense of the word unconscious, but unguided or at least unswerved by the fact of consciousness—is there place or possibility of economic law in Professor Fite's interpretation of the term. But still it is possible that the phenomena of suicides or murders or drunkenness can be generalized and that reasonably accurate forecasts of them may be made without the assumption that the phenomena are, therefore, vacant of consciousness or choice.

But I take it as a fair interpretation of Professor Fite's position to regard such human conduct as conforms to the hedonistic hypothesis, if any such there actually is, or such conduct as is completely selfish and ruthless in its pursuit of gain, as sufficiently approximating the automatic character of an entirely competitive "unconsciousness" as to render this conduct amenable to the methods and adequate to the requirements of economic law.

It will be obvious that our two philosophers need not, and very possibly do not, at all disagree as to the psychology of desire, but only as to the delimitation of the economic field, or possibly also as to the meaning of economic law. In substance it is to the view of Professor Fite that economists will have to turn for whatever comfort there is in the situation. It is precisely this fact that

in the social field we are dealing with the things that we best understand and most intimately know—the field of consciousness and of ethical appraisal and of choice—that makes the subject-matter especially inappropriate to the methods of quantitatively exact scientific law. To some of us it has even appeared that precisely here is the great and significant advantage attaching to what the laboratory science men dub the quasi-sciences as compared with their own so-called exactitudes; we do a little know and understand what we are talking about—men, their motivation, their needs, and their choosings. Residing inside ourselves, with whom we live in partial acquaintance, we are able to inspect the process from the inside. But these men of the physical sciences are always in presence of things that are essentially mysterious. The more cautious of these investigators have come to guard themselves from talking of forces, affinities, attractions, repulsions, energies, causes, or results. They simply report what different things occur and in what simultaneities or sequences—a purely exterior and descriptive statement of objective fact. In a sense, therefore, as Professor Fite insists, there is in all this for the economist both advantage and handicap. We shall never be "scientific," for that very best of reasons that we have no need to be: "Scientific method is irrelevant to the familiar and concrete; as a rule, we reserve it for the more remote and inscrutable. Scientific knowledge is knowledge by simplification; in other words, it stands for relative ignorance . . . For the concrete qualities of a substance the chemist substitutes an atomic structure; for varieties of color the physicist substitutes ratios of vibration of ether; for the relation between color qualities as such the physicist can tell you nothing," and it is to be added that his ether and his atoms are themselves unknowns, mere working guesses or imaginings.

It must result from Professor Fite's position that, while we may generalize even the phenomena in the field of human consciousness and choice, we can not force our phenomena into such categories of law as shall assimilate economics to the methods and laws of the physical sciences. It must be admitted that, if the notion of causation is in place at all in the field of human activities, it must be in the sense of stimulation and response rather than of some deduction from the notion of the conservation of energy. If causation holds in both fields, it holds in different senses and under different interpretations.

But Fite and Stuart are in entire agreement that the most effective method of studying social activities must approach the problems through an examination of the way in which human desires and choices actually proceed—the psychological approach, the method of

study from the interior view rather than by the uncomprehending devices of exterior observation. Doubtless the two methods, the points of view both of the agent and of the observer, as Professor Fite has defined them, are essential. The exterior view may indeed greatly contribute, as witness the services of statistics. And still it must be the interior, the agent, view that furnishes the key for the interpretation of the statistical materials.

But there are other methods aside from the suggested appeal to a purely behavioristic psychology—if psychology of any sort the consistently exterior study of any field of phenomena can possibly be regarded. In truth, it is not essential to economic generalization that any one influence or motivation as over against any other influence, or all influences together as over against any several or any one, be accepted as the organizing principle on which the facts shall be explained or presented. Avoiding the assumption that men are always selfish, that in their economic activities they always act unmorally or calculatingly or consistently or rationally, and avoiding also any methodological abstraction from other influences admitted to be actually or possibly present, we may proceed effectively and in relative security, if only we take it to be true that every man desires and chooses—so far as he sees—to get the greatest possible differential between sacrifice and reward, the most for the least. This is not much more than to assert that, whatever the motives and purposes, each man follows what is for him the line of least resistance or of the strongest pull. "We are concerned with his ends and not with his motives."[2]

But still we are making the same ultimate assumptions, that men (1) have desires and (2) make choices between those satisfactions that are mutually exclusive, and between the means that are open for the achieving of the particular satisfactions. It seems, indeed, that according to any method of the interior view, the thing could not otherwise be conceived to go on. These two assumptions recommend themselves as presumably safe by the fact that they are nowhere seriously contested.

But still I wonder and am afraid. Why has no one put in issue the fact of choice? or made trouble for us economists about the psychological process of it? After all, are there any choices at all? I recall that it did once appear to me that there are none, in any important sense, and that "even to say that we choose in the direction of the stronger desire is tautology, since choice is merely the fact of the stronger desire."[3] But I regret this statement as an unfortu-

[2] Viner, *Journal of Political Economy*, p. 248.

[3] From my review of Fetter's *Economic Principles, Journal of Political Economy*, Vol. XXIV., No. 4, p. 320.

nate and gratuitous excursion. It seems to me now that choice is something more than the mere emergence and victory of the stronger desire. I am sincerely sorry that I adventured at all into the psychological quagmire. And still the fact is itself important to the present purpose as showing that there is a mess, a problem, an issue, or may some time be one. But if ever there shall be one, and still the psychologists will leave it open to us, we can retire to a position of naïve acceptance of the mere fact of desire. *Utility,* in this sense, will still remain to us. And *marginal utility* is a logical as well as an actual derivative. Dispossessed of choice, we can not accurately have it open to us to compare marginal desirednesses or to set them over against each other for relative appraisal. Instead, they will have to set themselves over; and out of this process of the mutual comparison of themselves, the weaker desire will come to be overborne by the stronger; and to the satisfying of this stronger desire the purchase money in hand will direct itself as outlay; and all again will be as well as may be.

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THE RELATION OF TRUTH TO TESTS

With the exception of the pragmatists, modern philosophers are coming to recognize the necessity for a clear distinction between the definition and the criterion of truth. But too often the recognition is only nominal, and a writer who will use a page or two in explaining the distinction will violate it in the same chapter. There is nothing, I believe, which would aid more greatly in the solution of the truth problem, than an explicit agreement, consistently held to, that what may be said about a criterion of truth may have no influence at all upon its definition, and that a statement regarding the definition or meaning of truth may be entirely out of relation to the criteria by which truth is to be known.

Since the practical aspect of the truth question is to be able to distinguish the true from the false in situations that actually confront us, the pragmatists have naturally fastened their whole attention upon the criterion of truth, and have formulated the definition in terms of the criterion. Thus Professor Dewey says: "Truth is a character which belongs to a meaning so far as tested through action that carries it to successful completion. In this case, to make an idea true is to modify and transform it until it reaches this successful outcome: until it initiates a mode of response which in its issue realizes a claim to be the method of harmonizing the discrepancies

in the given situation. . . . Verification and truth are two names for the same thing." To illustrate: "I hear a noise in the street. It suggests as its meaning a street-car. To test this idea I go to the window and through listening and looking intently—the listening and looking being modes of behavior—organize into a single situation elements of existence and meaning which were previously disconnected. In this way an idea is made true."[1]

Now this identification of truth with verification, or of the definition with one of the tests for truth, leads one to such questions as the following. First, how many tests are necessary before the idea becomes true? My first test may well be inadequate—later tests may show it to have failed entirely to prove what I thought it proved; but if the first test satisfied me, if it "released the tension" in my experience and "restored harmony" therein, did it make my idea temporarily, even momentarily, true? Secondly, by whom are the tests to be made? We would agree that we can not identify truth with the conclusions reached through tests made by a lunatic or an imbecile, or by a normal person suffering an hallucination, or in some cases by an experimenter not an expert in the field under investigation. Surely the mere feeling of confirmed expectation, in just any one who chooses to test an hypothesis, is not sufficient to "make" a truth. Suppose that a man walking in a garden, to take another of Professor Dewey's illustrations,[2] detects a certain odor, forms the hypothesis that it belongs to a rose, searches, sees the rose, and feels his expectation fulfilled—he should, according to the theory, make his hypothesis true as soon as he is completely satisfied of the fulfilment of his expectation. Yet suppose that as the walk is continued the thing thought to be a rose is found to be only a spot of red light thrown at this point upon the foliage through colored glass. It is certainly a strain upon language to say that an hypothesis confirmed by an illusion is a truth. And as to the tested beliefs of the inexpert, their inadequacy is but too familiar: an amateur in chemistry, for example, may form, and confirm to his entire satisfaction, the hypothesis that the presence of a certain metal is indicated by a certain color of flame, whereas, in spite of some coincidences in these elementary tests, this metal and this flame-color may have nothing whatever to do with each other.

The frequency of *mistakes* in verification would seem to show that experimental results can not be completely identified with truth, as they must be when truth is defined in terms of verification.[3]

[1] *Influence of Darwin upon Philosophy and other Essays*, pp. 139–141.

[2] From "The Experimental Theory of Knowledge," *Mind*, N. S., 15, July, 1906.

[3] An interesting case of error confirmed as truth by the experimental method in the hands of scientists is given by Venn in his *Empirical Logic*, p. 510.

While we may agree that the experimental method is perhaps responsible for the greater part of modern science, and acknowledge it to be the best test of truth now in our possession, yet since even experimental verification is by no means an infallible method we can hardly go so far as to construe it as portraying the very meaning of truth. Unless a test is an infallible test, it can not be used as giving a definition, for that definition would not be reversible. Such a treatment of the truth problem gives as a definition: "True beliefs are those which have been experimentally verified" which, when converted simply becomes: "Beliefs which have been experimentally verified are true." If, as I have just tried to show, the latter assertion does not always represent the facts, then the former proposition fails as a definition.[4]

It is, of course, possible to reply that this depends on what we mean by "being true," and that both these propositions are true in case the first is once admitted as a definition. But this way out involves too many absurdities to be feasible. That ghosts walk in the night would then be proved true by the first white object which confirmed an expectation; that the presence of potassium is indicated by a blue flame might then be a true idea in the mind of a freshman even though every existing text-book in chemistry denied it; and so on for numberless cases. To make experimental verifications always true by defining truth itself simply as that which results from experimental verification is indeed to insure their coincidence, but to insure it by strong-arm methods hardly legitimate. In such a way might one make beauty coincide with art, or moral excellence with patriotism.

Another objection to defining truth as verification is that this procedure apparently fails to provide for accidental discoveries. The beliefs so forced upon us seem to be true in advance of verification. To take an instance: If while motoring we suddenly round a turn in the road and see a lake spread before us, our belief from that time forth that there is a lake at this point is a true belief, quite apart from experimental verification. To take the experimental theory of truth literally would oblige us to say that every accidental discovery must be rediscovered before it is true—that we must solemnly set about leading up to this experience again through a succession of prediction and verification in a make-believe experiment.

That Professor Dewey does not himself consistently adhere to this identification of truth with the results of experiment is apparently shown by the fact that in all his writings in defense of the

[4] "The test of a definition is the exact equivalence of the sphere of its subject and predicate."—Article on "Definition" by Adamson in Baldwin's *Dictionary of Philosophy and Psychology.*

theory he has never asked us to make an experimental verification of it. To be consistent, we would have to conclude that the theory, therefore, has never become true.

As a last criticism we may point out that although the definition of truth in terms of experiment is an attempt to enrich philosophy by material drawn from science, the analogy between the two disciplines is not strictly conceived. For, if the scientist in conducting a series of tests finds some results which seem, we will say, to show the presence of a certain element, and others which do not indicate its presence, then his conclusion is not that the element is present a part of the time and absent a part, but rather that he is not sure about its presence; and similarly, if certain tests of the truth of an hypothesis bring fulfilled expectations and others do not, then the conclusion ought not to be that the hypothesis was true for a time, false for a time, and then true again (though this is what we are asked to believe if we *define* truth in terms of fulfilled expectations), but rather that we are not sure about its truth.

Mr. Bertrand Russell makes the necessity for a distinction between the meaning and the criterion of truth transparently clear. He says: "If you wish to know whether a certain book is in the library, you consult the catalogue: books mentioned in the catalogue are presumably in the library, books not mentioned in the catalogue are presumably not in the library. Thus the catalogue affords a *criterion* of whether a book is in the library or not. But even supposing the catalogue perfect, it is obvious that when you say the book is in the library you do not *mean* that it is mentioned in the catalogue. You mean that the actual book is to be found somewhere on the shelves."[5]

Applying this distinction to the truth problem, Mr. Russell finds the meaning of truth to be correspondence with fact, and its principal criteria to be self-evidence and coherence. But the discussion here, unfortunately, is much less convincing. He reaches this conception of the meaning of truth by the over-simplified process of examining coherence and finding it inadequate as a definition, and from this concluding, "hence we are driven back to correspondence with fact as constituting the nature of truth."[6] The possibility of still a third theory of truth seems almost too obvious to be overlooked. As to the criterion of truth, Mr. Russell's treatment is limited by the fact that it is acceptable only to those who can embrace the realistic metaphysics, since on this criterion all that we know goes back at some point for its proof to a direct and immediate per-

[5] *Philosophical Essays*, p. 137.
[6] *Problems of Philosophy*, p. 193.

ception of reality as it is.[7] And even the immediate acquaintance with reality does not constitute an ultimate criterion of truth, because, as Mr. Russell says,[8] we can not know in any given case whether we are genuinely or only apparently in touch with reality. Since, then, Mr. Russell's definition of truth seems to claim credence principally through showing that an alternative definition is still less tenable, and since his ultimate test of truth is hardly one that is either widely acceptable or practically workable, it seems necessary to conclude that one must look beyond this type of realism, as well as beyond pragmatism, for a satisfactory and satisfactorily defended theory of truth.

It is well worth one's while to examine the solution offered by the man who founded pragmatism and then refused to abide by its later developments. C. S. Peirce, the pragmaticist, relies upon experiment as his principal test for truth, but formulates a definition independent of any particular test. "Truth is that concordance of an abstract statement with the ideal limit towards which endless investigation would tend to bring scientific belief, which concordance the abstract statement may possess by virtue of the confession of its inaccuracy and one-sidedness, and this confession is an essential ingredient of truth."[9] "The opinion which is fated to be ultimately agreed to by all who investigate is what we mean by the truth."[10] This ultimate agreement may be presupposed, for "all the followers of science are fully persuaded that the processes of investigation, if only pushed far enough, will give one certain solution to every question to which they can be applied."[11]

To define truth in terms of ultimate opinion is of course to define it "psychologically." But the word *ultimate* rules out most of the objectionable aspects of a psychological definition—it avoids the vacillating, the personal, the prejudiced, and so on, in opinion. This definition is free from ontological entanglements. It is not necessary, with this meaning of truth, to presuppose any one theory of the nature of reality or of the manner of our getting into relation with it. This, it seems to me, is its particular advantage as compared to the correspondence theory of truth.

This statement of the meaning of truth is obviously useless as a criterion of truth. Not only are we aware that we have no means of knowing at present what will be ultimately accepted, but we realize

[7] *Ibid.*, pp. 75, 207.

[8] *Ibid.*, p. 214.

[9] Article on "Truth" in Baldwin's *Dictionary of Philosophy and Psychology.*

[10] "Illustrations of the Logic of Science," in *Popular Science Monthly*, 1878, Vol. XII., pp. 299, 300.

[11] *Ibid.*

also that contemporary acceptance is always a poor indication of ultimate acceptance. It is necessary then to look elsewhere for a criterion, and this Peirce finds in scientific experiment. "Truth . . . is distinguished from falsehood simply by this, that if acted on it will carry us to the point we aimed at and not astray."[12] "When we speak of truth and falsity, we refer to the possibility of a proposition being refuted; and this refutation (roughly speaking) takes place in but one way, namely, an interpretant[13] of the proposition would, if believed, produce the expectation of a certain description of percept on a certain occasion. The occasion arrives: the percept forced upon us is different. This constitutes the falsity of every proposition of which the disappointing prediction was the interpretant."[14] "Verification will not consist in searching the facts in order to find features that accord or disagree with the hypothesis. This is to no purpose whatsoever. The verification . . . must consist in basing upon the hypothesis predictions as to the results of experiments, especially those of such predictions as appear to be otherwise least likely to be true, and in instituting experiments in order to ascertain whether they will be true or not."[15] As a scientist who has spent most of his earlier life in a laboratory, Peirce proposes scientific experiment as the criterion of truth. In this he is at one with the more conservative of the later pragmatists.

This seems to me an overworking of a tendency in itself excellent. It appears obvious that there is no absolute necessity for making experiment the *only* test of truth. Its claim to an absolute equivalence with the truth-criteria is hardly better founded than its claim to being equivalent to the meaning of truth. This can not but remind one of present-day claims of certain nations of the earth that are said not to be content with a share in the political interests of the world, but insist upon nothing less than complete domination of the world's affairs. So might experiment appear, in the hands of its friends, to wish to dominate the whole field of truth-criteria.

It ought to be possible, however, after concluding the search for a satisfactory definition of truth, to allow a place to a number of different tests, all to a certain extent effective in securing truth as thus defined. Experiment might be allowed first place, as the most decisive test of ancient beliefs and the most fruitful method of discovering new truths. Where it can not be applied, we may utilize,

[12] *Ibid.*, p. 14.

[13] "Any necessary inference from a proposition is an interpretant of it."

[14] Article on "Truth" in Baldwin's *Dictionary of Philosophy and Psychology.*

[15] Article on "Verification" in Baldwin's *Dictionary of Philosophy and Psychology.*

in the next place, coherence.[16] Under certain circumstances we may test by the clearness and distinctness of the idea, by simplicity, absence of exceptions, inconceivability of the negation, and so on. We may to some extent test our tests, and thus be able at least to reject those which are obviously ineffective in promoting truth in the sense of permanent agreement after investigation. On these grounds we must, according to Peirce, reject as truth-tests, *e. g.*, "tenacity" or the exercise of the will to believe, authority, and agreeableness to reason.

The result secured by any test or tests must be considered to be, however, only a higher or lower degree of probability. The formal criteria, it is true, give us within their sphere absolute certainty, provided the premises from which the reasoning starts are true. But since the truth of these premises can not be proved by the formal tests, and since no other tests are infallible, it seems best to call the results secured by the formal tests not absolutely true, but absolutely valid, this distinction allowing us to ascribe all deserved potency to the so-called truth tests (really validity-tests) of formal logic, while at the same time considering them to result only in probability.

Propositions fail, indeed, to be exactly true both because of the imperfection of our tests and because of our inability, when we have secured a proof, to state our result precisely. Such a method of looking at the truth problem is, I believe, that of science, and puts us directly in touch with the conclusions reached by scientists. Thus Poincaré says: "No particular law will ever be more than approximate and probable. Scientists have never failed to recognize this truth; only they believe, right or wrong, that every law may be replaced by another clearer and more probable, that this new law will itself be only provisional, but that the same movement can continue indefinitely, so that science in progressing will possess laws more and more probable, that the approximation will end by differing as little as you choose from exactitude and the probability from certitude."[17]

Our progress toward truth as ultimate agreement will apparently lie in the double process of rendering our statements more precise

[16] However, this test will not, in the opinion of the pragmatists, procure us real knowledge or truth. Thus Professor Dewey says in 1917: "Thinking gets no farther, as *thinking*, than a statement of elements constituting the difficulty in hand and a statement—a propounding, a proposition—of a method for solving them" (*Essays in Experimental Logic*, p. 13). This position is necessary, of course, only in case one has accepted Professor Dewey's definition of truth, from which it follows immediately.

[17] *Value of Science*, p. 130. A similar position is taken by A. Sidgwick in *Mind*, 1914, pp. 99–101.

and of perfecting the tests for their truth. The latter may involve a better working out of the technique of the use of some of the known tests, or the discovery of new tests (as of experimental verification in modern times), or a better apportionment of the tests to the fields of investigation for which they are best adapted. The business of the philosopher would seem to be concerned especially with this last task. How remarkable and fruitful a revolution would take place in philosophy if philosophers would concern themselves, not in showing that in a certain remote region of thought a certain criterion of truth will not work (and thereby implying that it ought to be rejected completely), but rather in working out the most effective correlation between the various criteria and the types of problems to which they are to be applied!

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COEFFICIENTS OF DIAGNOSTIC VALUE

ONE of the reasons for the interest in the relation between performance in mental tests and specific or general abilities is the possibility of utilizing the former in the prediction of the latter. All that is needed to establish the possibility of such diagnosis is an unequivocal demonstration that the relation between performance in tests and the ability in question is close enough to permit diagnosis of such accuracy as the concrete situation requires. The necessity of measuring the observed relation between the variables is at once evident; and the most commonly used index of the closeness of the relation is the Bravais-Pearson coefficient of correlation (or some coefficient devised to give approximately the same result with the expenditure of less arithmetical effort).

Now, although it is clear that a close relation between performance in tests and the ability in question is associated with the possibility of accurate diagnosis, and although any increase in the closeness of the relationship is accompanied by an increase in the accuracy of diagnosis, it does not follow that an index which is used in describing the relationship can be taken *directly* as an index of the diagnostic value of mental tests. In fact, the coefficient of correlation, a widely used index of relationship, gives a decidedly misleading notion of diagnostic value. It is my purpose to show why the coefficient of correlation is misleading, and to suggest a coefficient which may be used with less confusion in stating the value of mental tests in practical situations.

The coefficient of correlation is a generalized statement of linear

regression. And "all the statistician means by regression is this: If all the organs A of a certain size have associated with them an array of B organs having a definite mean value, then this mean value changes with change of A. The distribution of the means of B arrays for given values of A, whether expressed by curve or table, is in its most general form the phenomenon which Mr. Galton has termed regression."[1] Thus, on the average, men who are x inches tall will have sons who are shorter than the sons of men who are $x+3$ inches in height. On the average, children who are eight years old will read a certain fifty words in less time than will children who are six years old. In each of these cases two variables are involved, the A and the B of Mr. Pearson's statement. In the first illustration, A is the height of fathers, B the height of sons; in the second illustration, A is the age of children, B is the time required to read a given fifty words.

Regression is said to be linear if equal increments of one variable are always associated with equal increments of the other. Concretely, if, on the average, the sons of men $x+3$ inches tall are 1 inch taller than are the sons of men x inches tall, no matter what the value of x may be, the regression is linear.

The regression coefficient in linear relations is the ratio of an increment in one variable to the associated increment in the other. In the example above, the regression coefficients are one third and three. If each variable is measured as a deviation from its mean, a general statement of the relation is the following:

$$x = b \cdot y$$

where b is the regression coefficient. Verbally this equation states: Individuals who differ from the average of variable Y by an amount y, on the average will differ from the average of variable X by an amount b times y, or x.

The scales in which the variables are measured are accidental facts in a majority of cases, facts which affect the relation between the variables not at all. In order to make all scales comparable, the variables may be measured in terms such that the standard deviation of each variable is 1. *When such scales are used, the regression coefficient becomes the coefficient of correlation.*

The coefficient of correlation, therefore, states the ratio of increments in one variable to corresponding increments in the other variable, when the regression in linear and when the standard deviations of the variables are unity (or equal). Thus the correlation coefficient is a natural statement of the regression phenomenon.

[1] K. Pearson, "On the Fundamental Conceptions of Biology," *Biometrika*, Vol. I., p. 323.

From the point of view of diagnosis, the correlation coefficient gives a means of determining preferred values in X for observed values in Y through the use of the regression equation. But the only reason for having preferred values at all is to increase the *accuracy* with which the prediction can be made; and the correlation coefficient is not a direct statement of the accuracy of prediction. It is simply a generalized statement of regression. Clearly the coefficient of correlation should not be used directly as an index of the accuracy with which diagnosis can be made, unless regression and accuracy of prediction can be shown to vary in a one to one relation.

Since the value of one variable is to be predicted from known values of another, it seems logical to measure the accuracy of diagnosis in terms of the amount of error that will be made in prediction by the linear regression equation.[2] Suppose for one individual the regression equation gives a value x_1; suppose that the true value is X_1. The error is $X_1 - x_1$. Call this error e_1. For a second individual, the error will be e_2, and for a third e_3. The sum of the squares of these errors divided by the total number of individuals is known as the mean square error of estimation. The square root of this quantity, the root mean square error of estimation, may be regarded as the standard deviation of the true values of the individuals around their predicted values. The root mean square error is sometimes called the *standard error of estimation;* it is an index of the dispersion of true values around predicted values, and might be taken directly as an index of the accuracy of diagnosis.

Again, as in the case of the coefficient of correlation, it is desirable to obtain a coefficient that is independent of the scales in which the variables are measured. Again, this independence is gained by expressing the measurements of the variables in such a way that the standard deviation of each variable is unity.

Fortunately, the individual errors need not be determined, and the scales need not be actually changed, for the generalized standard error may be obtained from a knowledge of r. The equation[3] is

$$\epsilon = (1 - r^2)^{\frac{1}{2}}$$

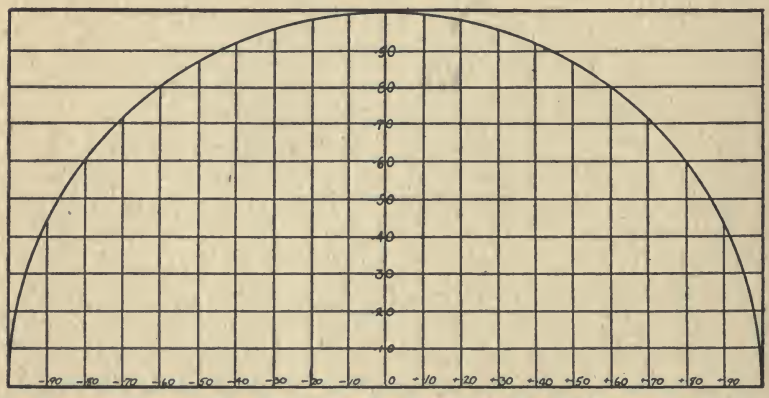
It is important to remember that the error coefficient which we shall use is the root mean square error of estimation when prediction is made from the linear regression equation, and when the standard deviation of each variable is unity.

[2] Discussion in this paper is limited to the case of linear regression. The significance of the linear equation in the general case is discussed by Mr. Yule in *Royal Society Proceedings*, Vol. 60, p. 477.

[3] Yule, *Introduction to the Theory of Statistics*, p. 177. The derivation of the formula is independent of an assumption of Gaussian distribution in the variables.

ϵ is the suggested index of the diagnostic value of mental (or other) tests. It expresses directly the magnitude of the error made in predicting the values of one variable from the values of another. Furthermore, it is easily derived from the coefficient of correlation.[4]

The meaning of ϵ is easily understood. If there is perfect linear relationship between the variables, ϵ equals 0; that is, there is no error in estimating one variable from another. If the two variables are independent, ϵ equals 1. The standard error of estimation is



The Relation between r and ϵ. Horizontal axis: coefficient of correlation. Vertical axis: error coefficient.

here equal to the standard deviation of the variable to be predicted; the accuracy of diagnosis will be only that which results from chance success. The maximum value of ϵ is 1; this is a logical limiting value, since it represents the error that is made in the wisest possible guesswork, that is, in giving all cases in the variable to be predicted the mean value. ϵ takes all values between 0 and 1; .5 means that the standard error made in predicting B from A is half as great as the error that would be made in the wisest guessing at the values of B; .25 means that the error is one quarter as great. These values, therefore, have a simple and easily understood meaning in the discussion of accuracy of diagnosis.

The coefficient of correlation is a misleading index of the diagnostic value of a test because it does not bear a one to one (or linear) relation to the standard error of estimation. The actual relation is as stated above. The graph of this relation is of considerable interest, and shows some striking facts. It will be seen that as r decreases from $+1$, or increases from -1, the standard error increases

[4] Dr. W. V. Bingham suggests that the fact that ϵ does not measure "reliability" in the psychological sense should be mentioned.

with extreme rapidity. Concretely, when r is equal to $\pm .86$, the standard error is half as great as it ever will be; when r equals $\pm .50$, the standard error is seven eighths its maximum size. *The amount of error made in predicting from the regression equation on the basis of a correlation of $+ .44$ is nine tenths as great as the error made in guessing on the basis of no information whatever.*

Does all this mean that a correlation of $+ .45$ indicates that a test has no diagnostic value? Not at all; for values are relative things that depend upon the accuracy of diagnosis that particular situations demand. In the most objective terms, ϵ indicates that the root mean square error of estimation in predictions on the basis of the regression equation and a correlation of $+ .45$ is nine tenths as great as the error that would be made in predicting by the same method on the basis of a correlation of .00. The investigator must decide for himself whether such reduction in the error of estimation makes the test valuable in the particular situation in which the test is to be used. The point of the present paper is to emphasize the necessity, in judging diagnostic value, of recognizing that the error of estimation is not reduced directly as the correlation is increased, of recognizing, for example, that a correlation of $+.60$ reduces the error of estimation only two tenths. I believe for these reasons that r is misleading, and that when diagnostic value is discussed, ϵ might be used as an index with advantage.

BEARDSLEY RUML.

UNIVERSITY OF CHICAGO.

REVIEWS AND ABSTRACTS OF LITERATURE

Egotism in German Philosophy. GEORGE SANTAYANA. London and Toronto: J. M. Dent and Sons, Ltd.; New York: Chas. Scribner's Sons. Pp. 171.

To the many hard things that are nowadays being said against Germany Mr. Santayana adds the accusation of Protestantism. That the Germans have long since adopted Luther as a patron saint and claimed him as exclusively their own, is well known. But this has commonly been cited as evidence of their tendency to nationalize and appropriate the common European heritage. Most of the critics of Germany have been themselves Protestants who were unwilling that their faith should be identified with the creed of a militant nationalism. Mr. Santayana has no such scruple. Their philosophy, he says, "is Protestant theology rationalized" (p. 22); and it is clear that so saying he means to disparage both German philosophy and Prot-

estant theology. But the argument is obscure, and scarcely convincing. Thus we are told that in the philosophy of Fichte and Hegel "the principal figures are not individuals, like the Creator, the Redeemer, and one's own soul, but nations and institutions." Now it is commonly supposed that it is Catholicism and not Protestantism which is institutional. In any case Mr Santayana himself says that Protestantism "is reformation essentially, in that every individual must reinterpret the Bible and the practises of the church in his own spirit" (p. 26). Again, "the Protestant precept to search the Scriptures, and the sense that every man must settle the highest questions for himself, have contributed to the zeal with which science and scholarship have been pursued in Germany" (pp. 28–29). This would seem to contradict not only the institutionalism which the author ascribes to Protestant Germany, but also the romantic illogicality, the pedantry, and above all the excessive docility or submissiveness which the German is supposed to show toward authority. Finally, Mr. Santayana presents us with two quite opposite versions of the spirit of the Protestant religion. On the one hand, Protestantism is a revival of primitive Christianity, a sort of religious experimentalism, in which the believer must renew the teaching and the practise of the church "in the light of his personal religious experience" (p. 26). But on the other hand, we are told that "it is of the essence of Protestantism and of German philosophy that religion should gradually drop its supernatural personages and comforting private hopes and be absorbed in the duty of living manfully and conscientiously the conventional life of this world. Positive religion, in fact, disappears . . . and there remains only a consecrated worldliness that is deliberate and imposed as a duty" (p. 23). The former of these two interpretations possesses a broad historical justification; the second would appear to reflect the author's first-hand acquaintance with New England Unitarianism. But in any case so ambiguous a version of "the Protestant heritage" can scarcely be expected to afford the key to the interpretation of a national culture.

"The soul of German philosophy," according to Mr. Santayana, is "egotism—subjectivity in thought and wilfulness in morals" (p. 6). It focusses on the media of knowledge, on its "veils and lenses," and thereby contradicts the very essence of knowledge, which is to report external objects. Thus "Hegel was a solemn sophist: he made discourse the key to reality" (p. 84). Transcendentalism is "this method of looking for reality within one's own breast" (p. 32); and of loving nature and history promiscuously as creatures of one's own making. Morally and spiritually this philosophy is a return to that primitive heathenism which "stands bravely before a painted world, covets some bauble, and defies

death;" to " the religion of the will, the faith which life has in itself because it is life, and in its aims because it is pursuing them " (p. 149). Such is the essential significance of Schopenhauer, Wagner, Nietzsche, and even Goethe.

Mr. Santayana's characterization of the German national genius is witty, apt, and irresistibly quotable. In the judgment of the present writer it is substantially true; as true, perhaps, as any such sweeping generalization can hope to be. Nevertheless, there are omissions and exaggerations in the account that are so obvious as to suggest caricature rather than criticism. Thus there is a sense in which it is true that transcendentalism is "looking for reality in one's own breast;" but this is by no means the whole of the truth, and it could be contended with much plausibility that it is the least important part of the truth. The dominant motive in Kant was not subjectivism, but rationalism. He was primarily concerned to reestablish the claims of exact science, to demonstrate the logical and mathematical structure of nature. Furthermore, Kant made important contributions to logic itself through his method of searching for presuppositions and postulates. It is true that he believed that the claims of exact science could be established only by regarding nature as phenomenal, and that his logic was confused by an admixture of grammar and psychology. But the fact remains that it is chiefly owing to Kant and his followers that philosophy has been diverted from sensationalism and the Platonic tradition kept alive. So much even realists must acknowledge. That the proponents of "creative intelligence" owe him an even greater debt need scarcely be remarked.

Mr. Santayana's account is similarly inadequate on the moral and spiritual side. Though he makes a brave effort, he is, in my judgment, quite unable to deduce from his formula of romantic heathenism such glaring traits of the German as his capacity for patient research and for organization, his pedantry, his dull sentimentality, his honesty, and law-abidingness. Heathenism, we are told, obeys " the inward and vital imperative which the bull obeys, when trusting absolutely in his own strength, rage, and courage, he follows a little red flag and his destiny this way and that way " (p. 153). But the fact is that the most notable thing about the German is his discipline. The best that the author can do to reconcile these contradictory opposites is to say that the real egotist will take his own subjective code so seriously that " he would feel it to be derogatory to his dignity, and contrary to his settled purpose to cheat at the game he has instituted " (p. 163). But this is not convincing. It is an ingenious paradox; but it leaves the reader with the feeling that it would have been better to admit that

when it comes to phenomena so complex as races and nations, some things must be left unexplained. For this reason the book before us suffers in comparison with Professor Dewey's *German Philosophy and Politics*. The latter is less literary and less entertaining; but perhaps for that very reason it conveys the impression of being more restrained and judicial. Furthermore, Professor Dewey is more skilful in his selection of a formula, for one can deduce at least twice as much from dualism as from egotism.

RALPH BARTON PERRY.

HARVARD UNIVERSITY.

Religious Values and Intellectual Consistency. EDWARD HARTMAN REISNER. New York: The Science Press. 1915. Pp. 59.

What do we mean nowadays by the words God and Religion? and can we really mean much of anything and yet be intellectually consistent? These are the questions that Dr. Reisner tries to answer in this book, which was his thesis for the degree of Doctor of Philosophy.

The author defines religion as an emotional attitude towards the whole of one's experience, and as concerned with judgments of value. Therefore it demands intellectual consistency. The concept of God has always done duty as the guardian of values, and so an historical survey of the God concept may throw light on some of the difficulties of religious philosophy.

The author then gives an account of the growth of Christian dogma and its disintegration, due to the growth of science and to the fact that the critical philosophy of the eighteenth century undermined the intellectual foundations of classical Christianity. The followers of Kant tried to rebuild religion on a basis of absolute idealism. Dr. Reisner gives the usual criticism of Fichte, Hegel, and Royce, and finds that idealism and its absolute have not succeeded in finding a metaphysical basis for the concept of God which is intellectually consistent.

The author then attempts to analyze the concept of God as it exists to-day in the minds of educated people. He believes that any attempt to find a God through philosophy will fail—"God must exist to be discovered and described." He finds that the God concept of the present time is a name representative of certain values, and that "the conception of God as a Being represents an historical phase of religion that modern scientific knowledge finds no place for." Religion is a natural, psychological product and must be founded on an empirical basis. There are religious experiences that are genuine and real, and for the religious man who is also scientific, God might well be the name or symbol for these experiences. "God is the name for the reality of religious experiences; the religious

experiences are the reality of God. God and religion are synonymous, and both stand for the reality of a realized or realizable experience."

The constructive part of this book is so interesting and alive that one regrets that so much space was given to the rather formal and perfunctory refutation of absolute idealism, which nowadays is hardly enough of a bug-a-boo to demand such a thoroughgoing exposure. The kind of discussion that centers around the author's ideas of religious values and religious experiences is the kind of discussion that people of to-day, vitally interested in religion as a fact of life, welcome and find interesting, although many may not agree with the author's conclusions.

FLORENCE C. LAMONT.

ENGLEWOOD, N. J.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. February, 1917. *Le langage* (pp. 105–131): DR. BARAT.—The author, following P. Marie, insists that aphasias involve a certain intellectual trouble. "That which is specific in aphasic troubles, is the injury, not of intellectual activity as applied to the comprehension of signs, but of the materials and tools of logical thought. These tools and materials are the automatic associations which intervene in the coordination of phonetic movements, in the analysis and interpretation of the sensation, in the evocation and identification of images." *La fonction et l'idéal de la géométrie* (pp. 132–170): PAUL DUPONT.—Chief conclusions: "the order of first propositions of geometry is not necessary and that of the classic treatises does not appear best. . . ." Classical geometry fails in that " it appeals to the three notions of plane, point, and straight line without defining them completely and employs confusedly unconscious postulates"; "it introduces the postulate of Euclid under censurable forms." These errors are to be redressed by taking as primitively given only the notions of the point (element), and the variable coupling of two points (relation); by reforming the theory of parallels, and by "giving to the postulate of Euclid a form relative to the primitive elements of the point and coupling, drawn directly from nature." *L'idéalisme positif* (pp. 171–189) (to be continued): DR. GRASSET.—Positive idealism, holding the idea or the human psychic fact as the base of all knowledge, and accepting the positive method, is grounded on human biology. The psychic fact is a cerebral cortical fact, and, therefore, somatic and physiological. "Superior psychic acts" are voluntary and conscious: "inferior psychic acts" are automatic and

unconscious. Complex psychical processes (*e. g.*, emotion) comprise two orders of elements, psychic elements, and non-psychic elements (*e. g.*, vaso-motor and circulatory phenomena). But both are physiological. The writer denies an intention to identify the two elements and repudiates physico-chemical monism, but insists that the "study of the cerebral part of the psychical function can be attached to human physiology and biology, though not to general biology. *Revue Critique.* Enzo Bonaventura, *Ricerche sperimentale sulle illusioni dell' introspezione:* Fr. Paulhan. *Analyses et comptes rendus.* Hugo Münsterberg, *Psychology and Industrial Efficiency:* Dr. Jean Phillipe. Giovanni Vidari, *Elementi di pedagogia: 1. I Dati della pedagogia:* J. Pérès. *Revue des périodiques.*

JOURNAL OF EXPERIMENTAL PSYCHOLOGY. April, 1917. *Some Tests on Memorizing of Musical Themes* (pp. 93–99): Kate Gordon. – Piano music was played by the experimenter at a fixed rate of speed determined by the ticking of a clock. The subject was required to sing, hum, or whistle as much as he could recall. The selection was repeated until the subject could render it perfectly twice. Nonsense syllables were also learned and tests were made where the subject learned reversed musical selections. Among other results were the following: for the musical group musical selections were easier to learn than nonsense syllables and for the unmusical group music was harder than syllables. The difference in ease of memorizing between nonsense syllables and music was less marked than between significant material and nonsense material. It is possible that a test of musical appreciation might be constructed which should hinge upon the difference in memorizing a significant and non-significant musical selection. *Quantitative Tonal Stimuli without Qualitative Change* (pp. 100–105): Harold A. Richmond. – A method is explained by which it is possible to produce an abrupt but smooth change in the intensity of a simple tone of high vibration frequency. *The Focal Vibrator* (pp. 106–113): A. P. Weiss. – Apparatus is described which is essentially a system of lenses so related to each other that a visual stimulus may be projected on a ground-glass screen. The apparatus controls several stimulus conditions. *Hipp Chronoscope without Springs* (pp. 114–116): Howard C. Warren and Prentice Reeves. – An arrangement is described where the adjustments of Dunlap are used and the springs counterbalanced by an added weight. *Systolic Blood Pressure Symptoms of Deception* (pp. 117–163): William M. Marston. – The problem was to investigate changes in blood pressure resulting from an effort to hide the truth. Among other conclusions are: The behavior of the blood pressure does not act as the least indicator of the objective validity of the story

told by any witness, but it constitutes a practically infallible test of the *consciousness of an attitude of deception.*

Āchārya, Śrī Ānanda. Brahmadarsanam or Intuition of the Absolute. New York: The Macmillan Company. 1917. Pp. xii + 210. $1.25.

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Locke, Prescott. The Conversion of Hamilton Wheeler. Bloomington, Ill.: The Pandeck Publishing Company. 1917. Pp. 285. $1.25.

Parker, DeWitt H. The Self and Nature. Cambridge: Harvard University Press. 1917. Pp. ix + 316. $2.00.

Sinclair, May. A Defence of Idealism. New York: The Macmillan Company. 1917. Pp. xvii + 355. $2.00.

Washburn, Margaret Floy. The Animal Mind: A Text-book of Comparative Psychology. Second Edition. New York: The Macmillan Company. 1917. Pp. xii + 386.

Wenley, R. M. The Life and Work of George Sylvester Morris: A Chapter in the History of American Thought in the Nineteenth Century. New York and London: The Macmillan Company. 1917. Pp. xv + 332.

NOTES AND NEWS

Letter from Professor Alexander

To the Editors of The Journal of Philosophy, Psychology, and Scientific Methods:

Professor Creighton's suggestion, in a recent number of this Journal, that the programmes of the American Philosophical Association be made a matter of constructive discussion seems to me admirable. I should like to add an expression of a hope that the field of the discussion be enlarged to comprehend not only the programmes, but the mutual relationships of all the associations in the country devoted to philosophy. Members of the Western Philosophical Association are by no means satisfied with the attitude of the American Association toward their plan of amalgamation, and hope for a reconsideration of that plan or for the suggestion of some other, perhaps more generally agreeable. In a country territorially so vast as is the United States it is obvious that regional associations must grow in number with the passage of time; indeed, all North

America ought to be the continental field for a single group of related associations, all gathering strength from their community of interest, and, if possible, of organization. It might be possible to have these groups organized for separate annual meetings and to have a triennial meeting of all, or of large delegations from all, at Washington, or some other accessible point. If at the same time related sciences, especially the whole group of the sciences of man (psychology, anthropology, sociology, political science, and economy), could meet along with their mother, philosophy, the triennial meeting could assume the proportions of an important congress, of much significance for the learning of the continent. Surely there is no question that one of the great problems of the civilization of the continent is the common understanding of its ideals or that the bond of such understanding should be the universities. And what science is in better position to prepare the way than is philosophy?

Very truly yours,

H. B. ALEXANDER.

UNIVERSITY OF NEBRASKA,
September, 1917.

THE appointments to the staff of the newly organized department of psychology at the University of Minnesota, of which Professor Robert M. Yerkes is to be chairman, as so far announced are as follows: Associate professor, Herbert H. Woodrow; assistant professors, Henry T. Moore and Joseph Peterson; instructor, K. S. Lashley.

THE Section of Anthropology and Psychology met in conjunction with the American Ethnological Society on October 22. A "Statistical Study of the Growth of Children" by Professor Franz Boas, Mr. Leslie Spier, and Mr. Louis R. Sullivan was presented.

DR. ETHEL BOWMAN, Wellesley, 1900, Ph.D., Clark University, 1917, has been appointed associate professor of psychology at Goucher College.

THE next annual meeting of the American Psychological Association will be held at Pittsburgh from December 27 to 29, 1917, instead of at Ann Arbor.

PROFESSOR E. H. LINDLEY, of the University of Indiana, has been elected president of the University of Idaho.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

ARISTOTLE AND THE PRACTICAL SYLLOGISM

IT is gratifying to observe that the attention drawn by Professor Dewey to the existence of a "practical" judgment-form, in which judgments about the future, about things to-be-done and about values tend to be expressed, has revived philosophic interest in the somewhat mysterious Aristotelian doctrine of the Practical Syllogism. Some, indeed, with that reverence for antiquity which distinguishes philosophy and theology, do not hesitate to claim that "the Father of Logic" had the prescience also to foresee its most modern heresies;[1] while in the past opinions have differed widely as to what the doctrine of the Practical Syllogism meant or proved.[2] It may not be amiss, therefore, to investigate it afresh and in the light of the new developments of logic, in order to determine if possible what this doctrine really was, what its logical significance and psychological value are, how far Aristotle's doctrine has a real bearing on modern problems, and finally whether it has anticipated Professor Dewey.

I

The most obtrusive, if not also the most instructive, appearance of the Practical Syllogism is undoubtedly in what Mr. Robinson calls "the famous discussion in the Nicomachean Ethics" (Book VII., Ch. 3, §§ 9–14), where it is used to explain the nature of "incontinence" (ἀκρασία). This passage is an *application* of the doctrine to a difficult moral problem which has resisted solution by intellectualist ethics ever since the days when Socrates attempted to reduce virtue to knowledge and vice to ignorance. Its primary importance is as an analysis of incontinence, and it can not, perhaps, be expected to give a full and satisfying account of the Practical Syllogism, though it may serve to raise the problems which this notion in-

[1] Like Mr. D. S. Robinson in this JOURNAL, Vol. XIV., p. 225, and the writer in *Mind*, No. 89, p. 1.

[2] *E. g.*, W. H. Fairbrother, in *Mind*, N. S., No. 23; D. G. Ritchie, in *Mind*, N. S., No. 24, and the commentaries on the *Ethics* of Grant, J. A. Stewart and Burnet.

volves. At any rate it does not do so and is hardly deserving of a laudation like Mr. Robinson's[3] when he declares that "here Aristotle shows very clearly what the application of logic to action is, but he was too good a logician to fall into the trap either of making practicability a unique logical character or of setting practical syllogisms into a figure to themselves. For he was well aware of the fact that logically speaking they are just like other syllogisms." Mr. Fairbrother is more moderate in his appreciation, but agrees that "this form of argument differs in no respect *formally* from any other syllogism, but has for its *matter* something which is not of merely abstract or scientific interest, but which affects us practically as living and sentient creatures."[4] As a matter of fact the Practical Syllogism, as stated in the *Nic. Eth.*, VII., 3, is neither intelligible in itself nor admirable in its performance, and a critical consideration of this passage alone could only entail its utter condemnation.

It may be objected to this account, (1) that it does not state the complete form of the Practical Syllogism and indeed does not even state any practical syllogism completely. For the complete form we have to go to the *De Anima*, III., Ch. 11, while in the *Ethics* the logical relations of the practical syllogisms indicated remain obscure.

(2) These "syllogisms" are three in number. One of these, which may be called "the syllogism of continence," is left quite vague; we are only told that its major premiss "forbids us to taste," but whether "all sweets," or only "to excess" is not stated. The other two are both "syllogisms of incontinence," and when completed would run, *all sweets should be tasted, this is sweet, ∴ this should be tasted,* and *all sweets are pleasant, this is sweet, ∴ this is pleasant.* It is not made clear whether these two syllogisms are equivalent or whether the second is in some sense an advance on the first, as Professor Burnet declares.

(3) If so, it seems unfortunate that it should drop the specific "practical" form, and no longer express any reference to an act to-be-done. In itself *all sweets are pleasant* appears to be as purely intellectual as any other statement of scientific fact; if it functions as the major premiss of a "practical syllogism," it is only from the particular context that its meaning can be seen to be really practical. In this respect it is like some of Professor Dewey's examples,[5] though unlike Professor Dewey the Aristotelian writer gives us no warning to this effect.

(4) The real trouble begins when we are told (§ 10) that there is no "essential" opposition between the major premiss of continence

[3] This JOURNAL, *loc. cit.*, p. 226.

[4] *Loc. cit.*, p. 365.

[5] *Essays in Experimental Logic*, pp. 335–36.

and of incontinence, and that their conflict only arises "accidentally," under the circumstances of a particular case when desire impels a man to act. For though it is doubtless true that *all sweets are pleasant* is not as such incompatible with *shun excess* and only becomes so in a particular case, yet it is *not* true that either of the alternative forms of the syllogism of continence is compatible with the *original* version of the syllogism of incontinence. *Shun sweets* and *shun excess* are *both* contrary to *all sweets are to be tasted.* Consequently the second version alone can claim to stand as the Aristotelian explanation of incontinence. Now in this version the "practical" *form* has disappeared, and as an explanation of real ἀκρασία, *i. e.,* fully conscious wrongdoing, it fails lamentably. For since the desire for bad pleasure, which is expressed in the minor premiss *this is sweet,* mobilizes a major premiss, consonant with it, in *all sweets are pleasant,* while there is no motive to construct a syllogism that would conclude to continence, the good principles that might serve as major premisses remain impotent and are not applied to the case. Hence the incontinent man, *in the moment of action,* is *not* aware that his act is wrong—that he remembers it *later* is not relevant. Being possessed by desire, which has constructed for itself an intellectual justification, he thinks what is wrong right. Now this is the *differentia* of the moral condition called by Aristotle ἀκολασία, "profligacy," and all that in the end the theoretical analysis of incontinence accomplishes is to describe it as a *temporary* lapse into profligacy. The ἀκρατὴς becomes ἀκόλαστος *pro tem.,* the ἀκόλαστος is the ἀκρατὴς grown chronic. This no doubt brings out the relation of both conditions to the growth of habits, but it is no explanation of conscious wrongdoing.

(5) It is singularly unfortunate that the Aristotelian writer makes no attempt to account for the action of the "continent" man. To have done so might not only have enabled us to see where precisely the difference lay between the man who yields to temptation and the man who overcomes it, but also have thrown light on the construction of "practical" syllogisms. As it is, it is only implied that there is a syllogism of continence and that it determines the action of the continent man. It would presumably run, *Excess is to be shunned* or *Sweets are to be shunned, This is excess* (or *sweet*), ∴ *this is to be shunned*: but how is it to be arrived at?

(6) The difficulty of answering this question consistently with the analysis given of "incontinence" is the apparent reason for this *lacuna.* The writer has committed himself to the position that the motive to action is to be found in the minor premiss alone, which (in the case of the incontinent) is dictated by desire. The universal major premisses are purely intellectual entities which lie inactive in

the mind until they are called up by some form of appetition (ὄρεξις). As Book VI., Chapter 2, § 5, declares, "pure intellection moves nothing," and a relation to an end of action has to supervene. If, therefore, it had been made clear in Book VII., Chapter 3, that a *good* minor premiss could mobilize a good major and construct a syllogism leading to continent abstention, what would have become of the writer's explanation of incontinence? For the question would have become irresistible—Why can not the ἀκρατὴς do what the ἐγκρατὴς does, and construct a syllogism of continence? And why can not both the desire for the bad pleasure and the desire (whatever it is) that prompts to continence be present together in the mind, and fight out a real moral struggle, which, according as it issues in one way or the other, results in continence or in incontinence?

(7) One final obscurity about the application of the Practical Syllogism to moral action must be noted, because it pervades the whole account. Is the analysis of action as a "practical syllogism" intended as a description of a process which *actually goes on* in the agent's mind, or is it merely a way of *reflectively representing* the actual process in intellectual terms? Do the incontinent actually think and construct practical syllogisms, or merely *act as if* they had constructed them? Is the Practical Syllogism a psychic fact or a logical analysis? Is the writer talking psychology or logic?

The answer is difficult because just this vagueness about the relation of logic to psychology has been characteristic of the traditional logic throughout its whole career. And it is, of course, no answer to say, with D. G. Ritchie, "What is now given is a psychological analysis of the mental state of the ἀκρατὴς, but with the help of the logical analysis of the syllogism."[6] No doubt at first sight one is strongly tempted to read Book VII., Chapter 3, psychologically (φυσικῶς) as a description of an actual psychic process: indeed, unless it is so taken, it becomes irrelevant to its professed problem, the psychology of incontinence. But the language (especially ὑπὸ λόγου πως καὶ δόξης ἀκρατεύεσθαι) is vague enough to admit of the logical interpretation, and there are other much more explicit statements of the Practical Syllogism that have to be considered.

II

It is important to grasp at the outset that the idea of a "practical syllogism" did not arise for Aristotle in a logical context at all. It is clear from the *De Motu Animalium*, Chapter 6, that what suggested it was the problem of explaining the purposive motions of animals and men, and the way in which their acts appeared to be

[6] *Loc. cit.*, p. 539.

controlled by ends to which they were means, and from which they seemed to follow, even as the conclusion of a syllogism follows from its premisses (*ibid.*, Chapter 7, *init.*). The "syllogism," therefore, is the perception of an *analogy* between the " movement " of thought, as reflectively analyzed by the logician, and the bodily movement of purposive action; and like the "theoretic" syllogism, it is *not* "psychology," but a product of philosophic reflection.

As a *psychologist* Aristotle endeavors to enumerate the psychic processes, from which motion might follow, as αἴσθησις (sense-perception), φαντασία (imagination, representation), διάνοια (intellection), προαίρεσις (purpose), βούλησις (wish), θυμὸς (temper) and ἐπιθυμία (desire). Of these the first three are intellectual and derivable from νοῦς (intuitive reason); the last three are grouped under ὄρεξις (appetition), while " purpose " is compounded out of νοῦς and ὄρεξις. The object purposed is the practical end or good, including the seeming good, and so " contingent"; hence the intellection and the reason involved are practical. Aristotle tries to maintain throughout his dualism of the theoretic and the practical reason, and the superiority of the former in virtue of the superior dignity of its " necessary " objects.

Accordingly in Chapter 8 (702 a 18) the chain of stimulations preceding organic motion is described as commotions (πάθη) of the organs, excited by appetition, evoked by representation arising from sense-perception or thought (νόησις). The last is mentioned because human agents manifestly do things in consequence of their awareness of theoretic objects; hence conceptions (ἔννοιαι) are possible stimuli to motion. But it is never really explained how it is that conceptions have the same power to move as appetition, any more than how intellection and appetition are united in "purpose"; Aristotle contents himself with a reference to his doctrine of an "unmoved mover."

He gives, however, abundant illustrations of "practical syllogisms" in Chapter 7, from which we may quote. " Whereas there" [in reasoning about the immutable objects of "science"] "the end is a theoretic proposition (for when one has thought the two premisses one has also thought and composed the conclusion), here the conclusion arising from the two premisses is an action; *e. g.*, when a man has thought that every man should walk and that he is a man, he straightway walks. . . . ' I need a covering, a cloak is a covering, I need a cloak. What I need must be made, I need a cloak; a cloak must be made.' And the conclusion, the cloak must be made, is an act. Nay he acts from the first. If there is to be a cloak, there must be the first step. And if one thing, then the other; and this too he does at once. So then it is clear that the act

is the conclusion." It is then pointed out that, as in theoretical inquiries, an obvious premiss need not be dwelt on, and that action is accelerated by the absence of reflection, "for when a man functions in view of his aim, either by way of sense-perception, or of imagination, or of reason, he at once does what he desires. For the activity of appetition takes the place of inquiry or thought. 'I must drink,' says appetite, 'this is drink,' says perception or imagination or reason: at once he drinks."

In the *De Anima,* Book III., Chapters 9–11, we find substantially the same doctrine as in *De Motu,* though in an obscure and difficult form. In Chapter 9 it is very explicitly denied that intellection (διάνοια, νοῦς) can be a cause of motion and this is illustrated by the case of "incontinence," where action is determined by appetite. Yet the continent, though they feel appetite, do not act on it, but follow reason. Hence (Chapter 10) νοῦς must be a principle of motion after all. Only it is *practical* reason, and purposive reasoning, and different in its end from theoretic. Ultimately this dualism of appetition and practical reason is overcome by the object of appetition (ὀρεκτόν) which stirs both—though no reason is given why it should excite the latter. It is the good aimed at, and is itself unmoved. So is the "scientific" major premiss (ἐπιστημονικόν) —we must add, presumably, "in a sense"; for the incitement to motion lies in the minor, as in *Eth. Nic.,* VII., 3. The form of the Practical Syllogism is, however, stated more fully here than in the *Ethics,* as "such a one should do such a thing, this is such a thing, and I am such a one, ∴ I should do this." This, as the commentators note, facilitates self-sophistication, since a failure to perceive *either* clause of the minor premiss puts the syllogism of ἐγκράτεια out of action; but it explains neither how real ἀκρασία is possible, nor how the ἐγκρατὴς overcomes his temptations, nor how the good principle can move to action at all, if it is "unmoved" and appetition alone moves to action.

III

The above catena of excerpts should make clear a number of matters which the allusions in the *Ethics,* Book VII., left obscure.

(1) The doctrine of the Practical Syllogism means, not that a practical syllogism *leads to* action, or that actions presuppose syllogistic reasoning, but that actions *are* the conclusions of "practical syllogisms."

(2) This applies to all acts alike, reflective or impulsive, good, bad, or indifferent.

(3) Hence the doctrine does not in the least explain how a man either resists temptation or succumbs to it.

(4) The writer of *Ethics,* Book VII., Chapter 3, whose identity with Aristotle has often been doubted, had no warrant for substituting in § 10 the "theoretic" form of reasoning for the "practical" form in § 9.

(5) It is pretty clear that the form is logical analysis rather than psychological description, and, an *ex post facto* interpretation of the psychic process, though a *penumbra* of ambiguity lingers about a few passages.

(6) Not one of these Aristotelian passages is really concerned with any of the logical questions now raised by Professor Dewey and myself. They do not discuss either (*a*) whether there is a specific judgment-form for assertions about acts-to-be-done, or (*b*) whether "practical" judgments have a special subject-matter, or (*c*) whether in *all* judgments irrespective of their verbal form logic should not recognize an implicit reference to action.

As to (*a*) it may be pointed out that there is no question in Aristotle of a practical form alongside of the theoretic, competing with it for logical recognition, and itself reacting on the notion of "logic." *Any* act may be conceived as a conclusion of a syllogism, and no importance is ascribed to the reference to a "to-be" in the form.

As to (*b*), it is true that acts, and, therefore, "practical syllogisms," are about special objects, *viz.,* the "contingent matter" of the sublunary world, but it is the difference in the objects that conditions the difference in the judgments, and not *vice versa;* moreover, the distinction is taken over from metaphysics, and does not in any way coincide with Professor Dewey's. "Theoretic" judgments (in Dewey's sense) about sublunary objects would be to Aristotle just as "contingent" as "practical." If, accordingly, we give up the precise Aristotelian doctrine about "necessary" objects in the sky, as the moderns all do, it follows that the judgments of our mundane science are all "practical."

As to (*c*) it is obvious that the doctrine stops short in a dualism aggravated and apparently insoluble, which leaves it unintelligible how intellect and appetite can ever cooperate, whereas the contention that there is a reference to action latent in all thought is precisely an attempt to overcome this intolerable dualism.

IV

Still we have not done with Aristotle. There are still some passages which may help us out. Thus, *Eth. Nic.,* VI., Chapter 2, declares that "there are three things in the soul which determine action and truth, perception, reason, and appetite. Of these perception is not the principle of any action" (in the narrower sense) "as

is clear from the fact that animals have perception but have no share in moral action. *Now what is in intellection affirmation and denial, that same thing is in appetition pursuit and avoidance:* so, since moral virtue is a purposive habit and purpose is appetition after deliberation, it is necessary on this account both that the reasoning should be *true* and the appetition *right,* if the purpose is to be *good,* and that they should severally affirm and pursue the same things. The intellection and the truth concerned are, however, *practical:* the intellection which is theoretic and neither practical nor productive *has for its 'good' and 'bad' the-true-and-false*—truth and falsity being the proper function of *all* intellectual faculty—whereas for *practical* intellection it is truth-consonant-with-right-appetition.''

What is here expounded is evidently a thoroughgoing *parallelism* of intellection and appetition. This must not be equated with Hegel's intellectualistic attempt to describe conflict as ''negation.'' For it is not intended to reduce appetition to intellection, but leads on to an incipient recognition of truth and falsity as essentially *values.* If we permit ourselves to develop these hints a little, we shall find that they go far to remove the difficulties we have noted.

(1) It is clear that if intellection and appetition run parallel, the former in no wise explains the latter. What this parallelism means is that the same fact, *viz.,* psychic life, may be conceived in terms *either* of pursuit and avoidance, *or* of affirmation and denial.

(2) Hence the Practical Syllogism is not an *explanation* of action, but only a *translation* of action into terms of intellection. It is merely to speak the language of logic instead of that of psychology. The claim which has been injudiciously made for it, that it reveals the logic of action and the dependence of action upon thought, vanishes of itself. ''Thought'' and ''appetite'' are coequal and interdependent, because they are alternative dialects for describing the same fact, now from a standpoint of logic, now from one of psychology, and any onesidedness in reducing action to thought should at once be atoned for by a complementary emphasis on the volitional aspect of all thought as the satisfaction of a desire and of a will to know.

(3) Nevertheless we can now see how the dualism even of this parallelism may be overcome. ''That which is affirmation and denial'' is also ''pursuit and avoidance''—what then is the unity that lends itself to this dual description? Clearly it is that which is *common* alike to ''theory'' and to ''practise,'' and to the ''good-and-bad'' of both. Now this is precisely the implicit reference to a *good-and-bad.* The good-and-bad of ''theory'' is, we are told, the *true-and-false.* It is precisely because the true is the ''good'' aimed at by all intellection, and the false is the ''bad'' to be avoided, that

intellect and appetite have any common ground, even to fight on, and can *both* be relevant to action. The mystery of how reason, as well as appetite, can "move" is solved when truth is regarded as a "good" to-be-sought, and error as an "evil" to-be-avoided.

(4) We thus arrive, by a purely Aristotelian *route,* at the humanist contention that "truth" and "falsity" are fundamentally *values.* "Value" is the supreme "category," which ultimately includes all psychic process, whether "practical" or "theoretic," whether a "logical" content or a "psychological." It is merely an incidental consequence of this conclusion that the very form of the "Practical Syllogism" attests this fact, by describing truth as a something to-be-sought, while it is an easy corollary that all judgments which claim "truth" are, in a very real and important sense, "practical."

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TWO COMMON FALLACIES IN THE LOGIC OF RELIGION

THERE are two fallacies that are met with so frequently in the literature of the philosophy of religion that they deserve explicit mention. The first, arising from a confusion between the value and the truth of religious beliefs, is so characteristic of the pragmatic way of thinking in the field of religion, that it may properly be labeled the pragmatic fallacy. The second fallacy arises from the attribution of the so-called religious experience to outside, "higher" forces in cases where, in reality, the cause of the experience is merely physiological—from "below" and not from "above." This may be called the fallacy of false attribution.

I

When value and truth are distinguished, and when it is seen that in many cases beliefs that are clearly false still have obvious value for those who hold them as true, then the argument so commonly used that, since certain religious beliefs possess value for the believers, they are therefore true, is seen to be unsound. Truth is definable in terms of consistency among beliefs or propositions, or of correspondence with facts. Pragmatists accept this when they say, as James does, that beliefs "work," and are true, only if they *agree with* reality; and they take the "working" of a belief as evidence that the belief does agree with reality. Truth is something that belongs to the subject-matter of logic, while value has a field of its own. Value is the subject-matter of the special science of value, and

there is a growing agreement in defining value in terms of organic interests. Things are *made* valuable when they are liked or desired, when satisfaction is derived from their presence or possession, *etc.* The statement will, upon reflection, be challenged by few that there is nothing good or bad, but liking or disliking makes it so. Those who do disagree with such a definiiton, calling value indefinable, as Mr. Russell and Mr. Moore do,[1] or defining it in terms of harmony or fitness,[2] *etc.*, will still avoid any confusion between value and truth. Beliefs may be true or false; they may also have value or disvalue. In most cases, probably, true beliefs are valuable, and false beliefs have disvalue, but not in all cases. It is a fact that false religious beliefs have possessed value in the course of history; and it is probably true that false religious beliefs still possess value under some conditions.

Pragmatism is biological in its treatment of mind. Mental processes, according to pragmatism, have arisen as aids to adjustment of organisms to their environment. In such a view as James's truth, and the survival-value of beliefs in the biological struggle for existence, are made synonymous, and it is just this that constitutes the pragmatic fallacy. It might be argued that, according to the instrumental theory of consciousness, not all beliefs, but only true beliefs, *i. e.*, beliefs that correspond with reality, can be of biological utility[3] through their instrumentality to the adjustment of the organism to its environment; but it is necessary to distinguish here, by reference to the objects of the two classes of beliefs, between what I shall call "scientific" beliefs and "metaphysical" beliefs. "Scientific" beliefs are beliefs about details of the physical environment. "Metaphysical" beliefs are beliefs about the nature of the universe as a whole, as, *e. g.*, the belief that the surface appearance of things is real, or the contrasting belief that ultimate reality lies only beneath the surface of phenomenal appearances. The phenomenal universe is not a "whole," so if there is a fundamental unity about the universe, it can be found only in some transcendent aspect of it. Beliefs in transexperiential realities of any sort, also, whether or not there be a unity about the objects, would be called "metaphysical" beliefs. Many religious beliefs are of this sort. "Scientific" hypotheses, if they are of any significance, are capable of empirical verification with at least some degree of success; while "metaphysical"

[1] Bertrand Russell, *Philosophical Essays*, pp. 4–15; G. E. Moore, *Principia Ethica*, pp. 5–14.

[2] See G. H. Plamer, *The Nature of Goodness.*

[3] Biological utility, or instrumentality, is a case of value, for what is instrumental to life is indirectly the object of interest or desire, since life is valued with approximate universality.

beliefs are mostly incapable of empirical verification. The beliefs that must be true in order to be valuable, biologically and otherwise, are the ones that I call "scientific" beliefs. For example, the belief that the ice on the river is safe is a "scientific" belief. It can be verified by venturing upon the ice. Such a belief as this possesses biological value only if true, for to believe that the ice is safe when in reality it is not safe may be an indirect cause of death, in case I go skating and am drowned as a consequence. Beliefs of this "scientific" sort are valuable only if they correspond with outside facts.

The case of "metaphysical" beliefs, however, is different. "Metaphysical" beliefs can not be verified by the pragmatic process of discovering the sense-data that constitute the objects with which the propositions correspond, for they refer to no empirical objects. But if they refer to no empirical objects that can serve as their verification, neither can they lead to objective results that are harmful. Holding a false "metaphysical" belief can never have such bad objective consequences as holding a false "scientific" belief, *e. g.*, a false belief about the condition of the ice; and the false "metaphysical" belief may, on the other hand, possess positive values of a subjective sort. An error believed has the same *subjective* effect upon the believer as a truth believed. Even if we assume naturalism to be the true metaphysical theory, it is plain that the (false) "tender-minded" belief in God would possess hygienic value for those who were made optimistic by the belief; and it would possess moral value for those who would not be moral without belief in supernatural sanctions. In the case of "metaphysical" beliefs, the effect is of a subjective sort, and is independent of the objective truth of the beliefs. A man in a naturalistic universe might profit from true "scientific" beliefs about the parts of the universe, and also from the emotional and moral effect of a false religious belief about the nature of the universe as a whole, its meaning, purpose, and the like. Many of the false religious beliefs of primitive man have had negative values so far as they have actually caused maladjustment to the physical environment by virtue of having "scientific" beliefs as components, but they have possessed numerous positive values, through being the source of moral instruction, of artistic production, of conceptions of law, *etc.* Much confusion will be avoided by keeping clear the distinction between the direct, subjective effects of "metaphysical" beliefs, and the indirect, objective effects of "scientific" beliefs. To believe in God, even if there be no God, can have no bad indirect, objective effect. On the other hand, the direct, subjective effects upon conduct, happiness, *etc.*, of religious beliefs may be of such positive value as to be a determining factor in the biological struggle for existence.

In the *Will to Believe*,[4] James emphasizes the emotional and moral necessity of some sort of theistic belief for the majority of people. No other sort of world-view, he says, is congruent with human nature. He recognizes in this early work, too, that mere congruity with man's emotional nature is not the meaning or the test of truth. He says:[5] "Theism, whatever its objective warrant, would thus be seen to have a subjective anchorage in its congruity with our nature as thinkers; and, *however it may fare with its truth*, to derive from this subjective adequacy the strongest possible guaranty of its permanency. . . . God may be called the normal object of the mind's belief. *Whether over and above this He be really the living truth is another question.* If He is, it will show the structure of the mind to be in accordance with the nature of reality." Though James here avoids the pragmatic fallacy by distinguishing the value of belief from its truth, his later developments of pragmatism obliterate the distinction, or they at least make emotional congruity sufficient evidence of truth in cases where verification by perception, consistency, *etc.*, is impossible or inconclusive. It is this that Professor Perry refers to as the pragmatic method of "verification by sentiment,"[6] when verification proper is impossible. Since truth is a matter of logic and epistemology, the extra-logical matter of sentiment should not be admitted as a test of truth. Let us content ourselves by saying that unverifiable religious beliefs possess value or disvalue, and stop at this point, rather than confuse matters of psychology and theory of value with logic.

That James did not keep clear in his later writings on pragmatism the distinction between the value and the truth of belief is obvious, not only from the general spirit of pragmatism, but also from certain definite statements that he makes.[7]

The pragmatic fallacy extends to the case of mysticism when employed as James employs it as evidence for the truth of religious belief. James concludes[8] that "personal religious experience has its root and center in mystical states of consciousness." Furthermore, it is largely, if not wholly, because of the value possessed by mystical states for the mystics themselves that James accepts mysticism as evidence of the truth of religion. A few quotations from James will make clear his position. He says:[9] "Mystical states indeed wield no authority due simply to their being mystical states." "To pass a

[4] Especially in Ch. IV.

[5] *Op. cit.*, p. 116. Italics mine.

[6] *Present Philosophical Tendencies*, pp. 209, 10.

[7] See *Pragmatism*, pp. 77, 204, 222, 273.

[8] *Varieties of Religious Experience*, p. 379.

[9] *Ibid.*, pp. 428, 413 (italics mine), 400.

spiritual judgment upon these states, we must . . . inquire into their *fruits for life.*" "The Vedantists say that one may stumble into superconsciousness sporadically, without the previous training, but then it is impure. Their test of its purity, like our test of religious value [=truth, as I have pointed out, for the pragmatist], is empirical: *its fruits must be good for life.* When a man comes out of Samâdhi, they assure us that he remains 'enlightened, a sage, a prophet, a saint, his whole character changed, his life changed, illumined.'" If mystical states have "no authority due to their being mystical states," and if it is only because of their value that they are accepted as evidence for the truth of the religious beliefs associated with them, or in terms of which they are interpreted by the mystics themselves, then here is another clear case of the pragmatic fallacy.

II

The question of the interpretation of mysticism leads up to the fallacy that I have called the fallacy of false attribution, which consists in the erroneous interpretation of an experience whereby the experience is attributed to an external, divine source in cases where a physiological explanation is adequate to account for the experience. Thus James says that the "inner" experiences, mystical in nature, which are central in religion, point to the intervention of superhuman powers. But it is possible that mysticism is only a form of emotionalism, explainable within a purely naturalistic scheme. Postponing for the moment a more thorough examination of mysticism, I will simply say that *if* mysticism is only a form of emotionalism, then the mystic, though indubitably passing through the experience, errs in ascribing to it a divine significance that does not belong to it. This is the fallacy of false attribution.

As Professor Hocking says,[10] "To distinguished between what is subjective and what is objective about our experience is frequently difficult, even in physical observation; but especially in the experience of the mystic." The difficulty of distinguishing subjective from objective aspects of any experience that occurs when one is in an unusual physiological condition is well illustrated in Kipling's *La Nuit Blanche.* Here a man with the "jims" on has remarkable experiences:

> In the full, fresh, fragrant morning,
> I observed a camel crawl,
> Laws of gravitation scorning,
> On the ceiling and the wall.

This is only one of his spectacular experiences. He himself perti-

[10] *The Meaning of God in Human Experience,* pp. 352, 353.

nently raises the question of the real objectivity of events in which the natural order of things is so upset, for he asks:

> Was it earthquake or tobacco,
> Day of doom or night of drink?

The truth of a belief in God is tested by seeking the object denoted by the word "God." If the mystic defined God as the mystical experience itself, then the truth of the belief in God would be established when the experience was obtained. But God, for the mystic, is not the mystical experience itself. That is, God is not the experiencing, but the experienced. God is believed by the mystic to be real outside of the occasional mystical experiences, and to reveal himself in the experiences. God is believed to be, not the experience, but the giver of the experience, which is interpreted as an experience of union with God. There is attribution of the experience to a supernatural source. Without such attribution, the experience is not called a religious experience.

James argues quite unsoundly that the question of the origin of an experience is irrelevant. He says,[11] "The plain truth is that to interpret religion one must in the end look at the immediate content of the religious consciousness." I would fully agree with this, since one essential component of the religious consciousness is the belief in something superhuman, but since such a belief is necessarily present in every religious experience,[12] the question of the natural or supernatural origin of the emotional components of the experience is very relevant indeed.

James's whole argument against the validity of attaching any significance to the connection between religion and sex is rather weak. It is not because "language drawn from the sexual life"[13] is common in religious literature that the psychologist interprets religion in terms of "sublimation" of sex. Much of religious literature is unreliable as scientific psychological evidence. This is shown by the fact, as James points out, that religion has often been described in terms of other instincts, more or less irrelevant. But it is just because religion is actually observed by modern psychologists to be correlated with sexual phenomena that a sexual origin is frequently ascribed to it.

What James really seems to be arguing for is the irrelevance, so far as truth and falsity are concerned, of ascribing to an experience a pathological, as opposed to a normal, physiological origin. He

[11] *Varieties of Religious Experience*, p. 12, note.

[12] In the case of the mystical experience there is present, at least *after* the experience, the belief that an objective God was revealed.

[13] *Ibid.*, p. 11, note.

admits my contention that the question of physiological origin *is* relevant when "supernatural origin is pleaded by the other side." [14] In the case of the religious experience, there is belief in a supernatural origin, as James himself insists. So in reality there is little disagreement in the last analysis between the views of James and the point that I am insisting on. James would admit the fallacy of false attribution when the question is one of attributing an experience to a supernatural source, by the one who has the experience, if the psychologist can establish the physiological origin of the experience.

Mysticism may be identified with the metaphysical system that asserts the unity, timelessness, immediacy, and ineffableness of reality, together with the denial of reality to the phenomenal world. Royce defines it thus, and proceeds to refute it.[15] Professor Hocking accepts[16] Royce's refutation, but says that mysticism has been historically a much broader thing than the metaphysical system that Royce refutes. Professor Hocking says,[17] "The agreement of the mystics lies in that fact, prior to doctrine, and wholly coextensive with religion, the practise of union with God in a special act of worship." But here is the rub. Here the whole question at issue is stated, in contradictory form. "The practise of union with God in a special act of worship" is not a "fact, prior to doctrine," as Professor Hocking says it is. It is rather the doctrinal interpretation of a fact. The fact is the experiencing. The doctrine is, that something objective, God, is experienced.

I would agree that the mystic's worship is an attempt to gain *what the worshiper believes is union with God;* but so long as science and scientific methods are accepted, there is a presumption against the truth of the belief. The mystic commits the fallacy of false attribution. The source of his experience is "within" and not without. The experience is a form of emotionalism, which consists of visceral reverberations involved in certain responses of the organism.

Professor Leuba has made a psychological study of mysticism,[18] and his conclusion is that mysticism is a form of sublimated love. This is the conclusion of the Freudians. Professor Coe gives a good criticism of mysticism.[19] He denies that anything objective is re-

[14] *Ibid.*, p. 19.

[15] *The World and the Individual*, Vol. I., Ch. II.

[16] *The Meaning of God in Human Experience*, p. 351.

[17] *Ibid.*, p. 352.

[18] See "On the Psychology of a Group of Christian Mystics," *Mind*, N. S., Vol. 14 (1905), pp. 15–27.

[19] G. A. Coe, "The Sources of the Mystical Revelation," *The Hibbert Journal*, Vol. VI. (1907–08), pp. 359–372.

vealed in the mystical experience itself, and says that the objective factor is added when the experience is interpreted. The cause of the interpretation made does not reside in the nature of the experience itself; but "tradition and instruction, auto-suggestion grown habitual, and reflective analysis,"[20] determine the interpretation of the mystical experience as a revelation of God. "The mystic brings his theological beliefs to the mystical experience; he does not derive them from it."[21]

Though the half-way mysticism of most mystics is inadequate, and involves the fallacy of false attribution, it is still possible that there may be a mystical solution of the religious problem. So long as any recognition is made of phenomenal reality and the world that the sciences study, mysticism must be regarded as emotionalism only, with a false belief as to the source of the emotion; but a complete metaphysical mysticism, such as Royce expounds and refutes, may still be the truest insight, and farthest from a final refutation. Thoroughgoing mysticism is at least wonderfully attractive, occasionally for all reflective persons, and always for a few; and it will continue to lure world-weary souls to the promised rest and peace of its Nirvana.

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DR. DEWEY'S DUALITY AND DUALISM

DR. DEWEY'S "Duality and Dualism"[1] furnishes another depressing bit of evidence that even the ablest philosophers sometimes can not grasp the simplest distinctions of those who hold views alien to their own. At the outset of the article whose logic Professor Dewey criticizes I had taken pains to explain the distinction between what many of us call epistemological dualism and what we call ontological dualism. I had tried in earlier articles (to one of which he also refers) to make clear that my view, although epistemologically dualistic, was ontologically monistic. My distinction had been ignored by several critics, who attacked my doctrine as an ontological dualism. In this article, therefore, I wrote: "I wish to leave no excuse for any further confusion of my epistemological dualism with ontological dualism." "In order to avoid any misunderstanding, I wish to state as explicitly as possible that I personally side with the dominant tendency in American realism in denying the existence

[20] *Ibid.*, p. 367.

[21] *Ibid.*, p. 367.

[1] This JOURNAL, Vol. XIV., p. 491.

of a non-physical stuff or realm or awareness or subject or ego—'there ain't no sech animal.' The 'mental' is a subclass of the physical, or refers, if you prefer, to a relation between certain physical entities. This is ontological monism."

This distinction, and this use of terms, is no idiosyncrasy of mine. All of these terms are, of course, open to objection and misunderstanding. But it has seemed to me wisest to keep to the terms used by those whom I know to hold the doctrine which I hold. I recently discussed this matter of terminology with four leaders of philosophic thought in this country, frequent contributors to these columns, who hold the doctrine. It was their unanimous feeling that these are the best terms to use for the doctrines to which I refer, and that the distinction which I have emphasized, and which Dr. Dewey persists in ignoring, is important. I must ask, then, in all courtesy, to have my terms accepted in this sense, in which they are currently used by responsible writers, and which I have been careful to explain.

We have often offered evidence that our sense-data constitute information (even when not recognized as such) concerning existents outside of consciousness. The perceiver gains his knowledge of these outer existents through his sense-data. They may be said to represent those outer existents, in the sense that they vary concomitantly with them, and act as substitutes for them in guiding the organism. If this is the situation, our term "epistemological dualism" seems to us warranted. Professor Dewey does not discuss the evidence we offer; and I must not here repeat it. Nor am I concerned to defend our terms as the best available. All that I wish to do is to clear them from an evident misinterpretation, and thereby to defend myself from the accusation of logical fallacy.

My logic, my critic says, "amounts to assuming that wherever you have numerical duality in perceiving there you have epistemological dualism." But we do not say "wherever," nor do we say that *any* "numerical duality" implies epistemological dualism. What we say is that *in certain situations* (perception, memory, *etc.*) there is numerical duality (*viz.*, between sense-datum, memory-datum, *etc.*, on the one hand, and object-perceived, object-remembered, *etc.*, on the other hand), *of a certain sort* (described above); and any theory which clearly recognizes this kind of duality in these situations we *call* epistemological dualism. That is what we who hold the doctrine *mean* by it.

Professor Dewey's misunderstanding seems to be twofold. In the first place, the "numerical duplicity" which he speaks of is apparently not that which we are speaking of, not that which leads us to call our doctrine by the name which he thinks unwarranted. The numerical duplicity which he recognizes is "the difference in

time and place, *etc.*, of the organic event of sensing, imagining, *etc.*, from that of its extra-organic cause . . . a difference in the detail of a series continuously physical in all its constituents." This duality he has often spoken of, apparently supposing that this is the duality which we epistemological dualists are talking about. We have replied, in effect, that we recognize that physical series, and rejoice in it, but that our doctrine rests upon another duality entirely, the duality, namely, which I have mentioned in the preceding paragraph. By "object perceived" we refer to what he is apparently referring to by the phrase " extra-organic cause." But by "sense-datum" we mean something else than "the organic event of sensing." Hence the statement that the two items of which he chooses to speak (together with various other items of which we are likewise not speaking) stand in a continuous physical series is an irrelevance.

Even, however, if he were speaking of the same two items as we, it would be still irrelevant to show that they stand in a continuous physical series. Suppose they do! We shall none the less call ourselves epistemological dualists. For the meaning of that term has nothing to do with the question whether or no our two items stand in such a series. It is just the simple *fact* of the duality plus the fact of the use by the organism of the one item as if it were the other, that leads us to adopt that term, in contradistinction to those who deny or ignore that duality.

But his chief misunderstanding is that of which I spoke at the outset, the assumption that I mean by the term "epistemological dualism" the belief in two kinds or realms of Being, that I believe in "a separate world called psychical." After admitting a duality (*his* duality, not mine) in perception, he says, "At no point is there a switch from one order or genus of Being to another. And without such a switch there is neither epistemological dualism nor does the demand for an epistemological monism arise." Here, as throughout, he seems to be reading into the term "epistemological dualism" what, in the very article he is criticizing, I explicitly declared to be not its meaning for me. His confusion results no doubt from the fact that many, perhaps most, epistemological dualists are also ontological dualists; and some of them on occasion have made the very illogical leap which he attributes to me. The distinction, however, between the two senses of the word "dualism" is clear enough; and the failure to recognize it leads him to misread my conclusion as well as my premise. It is small wonder that he finds my logic faulty!

The incident deserves this attention, not for the sake of protecting the honor of my logic, but in order to win a better comprehension for a doctrine held by not a few, and persistently misrepre-

sented by its opponents. The whole issue between us and the epistemological monists evidently seems factitious to Professor Dewey; he declares he has not a "chemical trace of interest" in the one doctrine, and no more in the other. If it is not discourteous, I should like to suggest the possibility that the pragmatist's lack of interest in certain problems with which other workers are grappling may occasionally be due, like the sense of superiority of the contemporary pacifist who is "above the battle," not to an actual transcendence of the problems, or discovery of their unreality, but to obsession by an inhibiting idea which prevents their acuteness from being felt.

DURANT DRAKE.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Rhythm of Prose. WILLIAM MORRISON PATTERSON. New York: Columbia University Press. 1916. Pp. xvii + 193.

Common enough in our vast literature on the subject of *rhythm* are the empirical researches made by psychologists who are interested in this particular field. Seldom, however, have those who are chiefly associated with the musical and literary arts undertaken to contribute data patiently gleaned from scientific investigations of their own. With greater stress on the experimental side of art may come the development of a science of music, of literature, of painting, and of sculpture. And what science can be of greater service in laying the foundations of an adequate knowledge of the underlying principles which form the basis of music, of literature, or of any other art, than psychology? An eminent psychologist and philosopher recently remarked that at no far distant date we should be able to control the forces of mind as precisely as we now regulate the forces of matter. When the thoughts, emotions, and actions of men's minds can be harnessed as we now harness the energies of physical and chemical substances, two things may happen: we shall be enjoying our lives in a world of peace without pause or, becoming the tools and slaves of misleading leaders, we shall wage war more diabolically than ever.

Be that as it may, we are surely taking a great step in the direction of understanding the mental structure of man more accurately when we begin to study music and literature from a psychological point of view. New vistas begin to spread out before us, new products of mind are critically examined. Not long hence, as we now read about a psychology of music,[1] we shall notice the familiar

[1] *Cf.* H. P. Weld, "An Experimental Study of Musical Enjoyment," *American Journal of Psychology*, Vol. XXIII., pp. 245–308.

sound of phrases like "the psychology of poetry," and the "psychology of prose."

Before us is a work which might aptly be entitled "the psychology of rhythmic prose." Short of claiming a major interest in psychology, the author has fortified himself in his reading and in the selection of his advisers to such an extent that no professional psychologist, who is interested in any aspects of the subject presented, need hesitate to give the book his earnest attention. In the introductory outline much is said concerning the individual who is, in a rhythmical sense, "aggressive." He is capable of creating a rhythmical grouping out of objectively unstressed members, of modifying this grouping at will, and of carrying without effort passages which have syncopated accents. Since "prose rhythm must always be classed as subjective organization of irregular, virtually haphazard arrangements of sound," the person who is rhythmically "aggressive" here finds grist for his mill.

With Chapter I. the principle of "unitary pulses" of sound already suggested in the introduction is elaborated into a theory. Wundt and Meumann are subjected to criticism for failing "to keep before their eyes three important factors, familiar to every musician: first, the possibility of accelerating or retarding a series of regular motions without destroying the impression of rhythm; second, the possibility of substituting at any time (*i. e.*, spontaneously) one long time-interval for several equivalent short ones, or *vice versa;* third, the possibility of preserving a certain series of time-intervals, but of changing in various ways the nature of the motions or sensations that mark the beats." The factor of retardation and acceleration involves a gradual change in tempo without a change in the rhythm; under "substitution" the author comprehends the increase or decrease in the number of members of a group without alteration of the rhythm; and "syncopation" is explained as "the interpolation of some concealed form of motor reaction, such as an eye, throat, tongue, or breath movement, which alternates with a more visible movement, such as nodding, or tapping, or dancing." The author has found that intricate syncopated rhythms, such as beating five against seven, could be successfully followed by persons who had had practically no musical training, provided they have heard the combination performed by some one else. The application of this factor to the interpretation of the complex rhythms of many primitive peoples appears to militate against the supposition that their rhythmical sense is very highly developed.

All of these factors have been carefully investigated in a series of experiments which are described in detail in one of the divisions of the appendix. They were performed in the sound-proof room of

the psychological laboratory of Columbia University and in an underground chamber which was especially constructed to exclude sounds of all sorts and which has since become famous through Miss Amy Lowell's description of it in her lectures as a "dungeon." The experimenter used the well-known device of photographing the sound of the voice on a moving film by means of a system of mirrors, one of which was attached to the back of the membrane that was actuated by the voice. Instead of the arc-lamp as a source of light, small Mazda lights burning at a supernormal voltage were used to overcome the objectionable feature of the attendant noises. A number of accessory pieces, such as the Leipzig time-sense machine, kymograph, keys for tapping, sound-pendulum, and other instruments, were required. Preliminary experiments were arranged for the study of subjective rhythm, of free rhythm, of physiological rhythms, of type of imagery, of auditory memory, of motor reproduction, and of temporal perception. The experimental results are compiled under appropriate headings in a section of the appendix and furnish the basis for discussions in the text.

Chapter II. gives one of the best summaries of the experimental investigations in the extensive field of rhythm which the reviewer has read. There are, however, two chief disadvantages under which the historical survey labors. They are probably unavoidable in a chapter as ambitious in its scope as is this one. The survey under these conditions must be a sort of bird's-eye view: each item in the landscape is not very intimately observed, nor is the order in which the observations are taken apt to be a logical one. One looks now here, now there, and never for any length of time at a single object. As we read the chapter we like to assume that the author has as a matter of fact buried himself deeply in the thoughts of Wundt, Meumann, Benussi, Sievers, and the rest, but the impression which one objectively gains from the reading of it is a failure to interpret the citations in terms of the writer's system and a lack of organization in the material presented. Later the author confesses his shortcomings when he comments on the fact that the literature was "very briefly and incompletely reviewed."

The "sense of swing" is described in Chapter III. as "the ability to move according to progressive laws, however occult, and to feel instinctively in the performances of others the lawful course of their progression in case they conform themselves to what we mean by 'proper swing.'" This ability is largely influenced by the memorial factor which the author tests, among other things, in terms of the reproduction of a gradually decreasing and increasing series of temporal units (.7, .6, .5, .5, .6, .7 sec.).

We are next initiated into the subject of "rhythmic tunes."

The author holds that in the reading of metrical verse, the reader attempts to seek the pattern upon which the verse is built. The "unitary pulses" easily merge with the accent and are ultimately lost to the reader's attention. If, then, another person indicates to a reader the arrangement of stresses in a suitable prose selection, these "unitary pulses" function in the same fashion, but probably more noticeably as a sort of accompaniment to the melody. This is the "rhythmic tune." We learn, furthermore, that "'tune' . . . not only suggests an auditory sequence, temporally and accentually organized, but brings to mind two interesting facts—first, that even in a succession of noises, impressions of definite pitch are likely to occur; second, that even in a succession of notes of unvarying pitch, fictitious melodies, of definite tonal structure, are easily added subjectively by some observers." Another noteworthy point which was emphasized in the experiments was the rôle of kinesthesis in the rhythmical perception. The reviewer's conclusions concerning the function of the motor factors seem to find corroboration in this study.[2] The author remarks that muscular sensations were particularly noticeable when the perception of rhythm was somewhat of a task. He says, "these unitary (ungrouped) time-intervals are marked off by a series of what appear to be muscular tensions in the region of the head, sometimes localized in the neighborhood of the ears (*musculus tensor tympani*), sometimes in the throat, or elsewhere." At this point a reference to the theory of Ewald,[3] the earlier assumptions of Mach,[4] and the more recent statements of Titchener[5] would have been appropriate.

The chapter on "Vers Libre" has probably attracted the attention of reviewers more than any other. The problem has arisen as to whether or not there is a possibility for the existence of a third class of literary form which is to occupy a middle ground between definitely accented verse and ordinary irregularly stressed prose. On the basis of his experiments, the author comes to very definite conclusions. Without taking into consideration any emotional or ideational effects produced and judging entirely on the grounds of the rhythmical impression obtained, the statement is made that "*there exists no fundamental time-rhythm experience correspond-*

[2] C. A. Ruckmich, "The Rôle of Kinesthesis in the Perception of Rhythm," *American Journal of Psychology*, Vol. XXIV., p. 359, and a recent study of visual rhythm, *v. Psychological Bulletin*, Vol. XIV., p. 46.

[3] R. Ewald, *Untersuchungen über d. Endorgan d. Nervus octavus*, 1892, p. 294.

[4] E. Mach, "Untersuchungen über d. Zeitsinn d. Ohres," *Wien. Sitz.-Ber.*, Vol. II., 1865, p. 133.

[5] E. B. Titchener, *A Text-book of Psychology*, 1915, p. 345.

ing to a tertium quid between prose and regular verse. . . . According to the results of our experiments, therefore, there is no psychological meaning to the claims for a third *genre* between regular verse and prose, except in the sense of a jumping back and forth from one side of the fence to the other." If this fact is established—and we are not disposed to question the author's judgment on this point—then, in the literary field, to say nothing of applications in other fields as well, this conclusion reached on the basis of an empirical approach ought alone to justify the task that was undertaken.

The author sums up his various arguments under thirty sections in the last chaper. "Wundt's statement that no series of impressions exists that can not in some way be conceived as rhythmic, is established, but with the limitation that no clear, continuous rhythmic experience is possible in connection with haphazard series, except for individuals especially endowed." Meumann's opinion that rhythm is a complex process and is not confined to any one sense is also confirmed; but the author is not inclined to sanction the theory of speech-melody which has been so impressively advanced by Sievers.

To the reviewer's mind it appears that the chief contribution of the book lies in its enthusiastic application of the experimental method to studies of literary forms of rhythm. The results seem more suggestive in the way of promising future channels of keen analysis in numerous directions than indicative of any thoroughgoing inspection of specific mental processes. The perception of rhythm has been investigated from so many angles that it is time to take an inventory of results and map out a new campaign. The author embarks on such an expedition with all the vigor of a new recruit. It may be well for the enterprise that he learn not too much of previous failures in some of the ventures. His ardor to follow certain paths of investigation probably leads him to underestimate previous endeavors that have been made. Consequently, without taking into account exactly the kind of game they play, he gives such keen thinkers as Wundt and Meumann the hint that they have several errors chalked up against them. The problem for both of these writers was to discover what is going on in the mind when we perceive rhythms. The former stresses the rôle of the emotions and feelings;[6] the latter makes rhythm largely an attentive experience,[7] and both recognize the play of ideational

[6] W. Wundt, *Grundzüge der physiologischen Psychologie*, Vol. III., 1911, pp. 147 ff., 336.

[7] E. Meumann, "Untersuchungen zur Psychologie und Aesthetik des Rhythmus," *Philos. Studien*, Vol. X., 1894, pp. 397 ff.

processes. The objective circumstances which bring about the affective changes in the first instance or the attentive strains in the second instance are of secondary importance. And we are not told by the author what mentally constitute "unitary pulses," *i. e.*, whether they are matters of attention, of affection, of perceptual form, or simply of kinesthetic complexes. Naturally we have to be on our guard lest, as Herbart was fond of remarking concerning "faculties," we fall into the habit of clothing our ignorance with a name. The reviewer has searched in vain for a descriptive account of a "unitary impulse" from a psychological point of view.

On the whole the book is very stimulating and reads well. The experiments were carefully conducted and arranged to bring out what the author had planned to do: indeed, it is the reviewer's impression that the appendix furnishes a working model for other experiments of this nature. It is suggested that the author some time take the opportunity to investigate intensively one or more of the many problems that were indicated in the course of the experiments, such as (1) the question whether there is any relation between pronounced auditory imagery and musical or rhythmical talent, (2) the formulation of a more accurate method of grading the test for the "sense of swing," (3) the elaboration of the test for skilled coordinations, (4) further investigation of the factors which lead to increased retardation in the tapping experiments, (5) a synthetic tabulation showing the relationship of the individual tests and the rating received by each observer. If these tests were standardized, it is probable that they would be of service in the investigations of musical ability.

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The Essentials of Philosophy. R. W. SELLARS. New York: The Macmillan Company. 1917. Pp. 301.

The significant feature of this introductory text in philosophy is a certain novelty of method in its construction. First books in philosophy present peculiar difficulties, owing to the fact that current problems are historical products; and it is difficult to choose judiciously the amount of history to be incorporated in such a work. The writer of an introductory text may elect to present his subject by treating types of theory as a series of traditions; then by proper selection and arrangement of the facts of the history of philosophy these traditions are severally expounded in their "historical" order of development, frequent cross-references between traditions giving unity to the whole. The book is then topped off by an account of the writer's own position which hastily reconciles the divergencies

appearing between the traditions. Some such plan seems to be commonly adopted. The limitations imposed by the compass of the ordinary introductory text necessitate such a condensation, rearrangement, and simplification of the historical facts that the book is likely to be a hybrid—something more than a beginning of philosophical reflection and something less than a history of philosophy.

Professor Sellars has circumvented these difficulties in so far as the nature of his work permits. His method is logically genetic. In the main, the excursions into the history of philosophy are used as illustrative of an account of the logical growth of reflection generated by criticism of the "philosophy of the plain man." The confusion of the history of philosophy and this logical growth is fairly well avoided. The book frankly leads up to Professor Sellars's critical realism.

The starting-point is the "philosophy of the plain man," or natural realism, which is, however, not unreservedly presented as the philosophy of some historical personage, nor as a stage in the historical development of philosophy. The natural realism of the plain man is the "first level" of thought. After an account of this level (Chapter II.), there follows an account of the break-down of natural realism, and of the generation of representative realism, idealism, and skepticism. The field is thus prepared for an outline of the author's non-apprehensional critical realism (Chapters IX–XI). From the position therein attained, the problems of truth and error, mind and matter, substance, purpose, and mechanism, and the like, are examined. In the final chapter, which treats of value, an outline of the five "levels" is given. These levels are: (1) Natural Realism; (2) Enlightened Natural Realism; (3) Scientific Realism; (4) Idealism; (5) Non-apprehensional Realism (pp. 290–293). Throughout the book the first level serves as a background upon which are projected the various doctrines arising through reflection upon that level.

This book, in the opinion of the reviewer, is one of the most acceptable introductory texts that has come under his notice. It is well fitted to the needs of the beginner, and it admits of all necessary expansion on the part of the teacher. It should find wide acceptance as a text.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. March, 1917. *On Some Conditions of Progress in Philosophical Inquiry* (pp. 123–163): ARTHUR O. LOVEJOY. – (The presidential address delivered at the December meeting of the American Philosophical Association.) The view here set forth is that philosophy is a science and deals with objective, verifiable, and communicable truths. As such it must be distinguished from personal reactions and temperamental idiosyncrasies productive solely of edification. Diversity, disagreements, and undulations in philosophy are due to woful disregard of scientific procedure. Progress in philosophy is a matter of method. The present *Discours de la Méthode* comprises six points: 1. Trained inductive investigation; not boldness, but circumspection is the watchword. 2. A deliberate and systematic attempt at exhaustiveness. 3. Organized cooperation and discussion. 4. Announcement of topics for discussion at the meeting of the association one year in advance. 5. Treatment of individual problems in isolation. 6. Preparation through cooperative effort of many philosophers of a comprehensive *catalogue raisonné* of "considerations," a modern *Summa Metaphysica. The Nature of Ought-Ness* (pp. 164–177): A. K. ROGERS. – Distinguishes the logical ought which rests on a "because" from the purely ethical ought. The ethical ought is not present as an intellectual form of consciousness nor can it be accounted for by custom or habit. The nature of obligation is located in "feelings of repugnance, or of disapproval," the operation of which involves restraint upon desire. Elaborates this view by considering supposed objections to it. *Philosophy as Handmaid of Society* (pp. 178–189): HORACE C. LONGWELL. – "The conclusion may be stated at once: That wholly disinterested inquiry must remain an ideal only, since, however free it may become, it is bound ultimately to regard the welfare of society as a basic condition of all human activity, including the search for truth itself." *Proceedings of the American Philosophical Association; The Sixteenth Annual Meeting, Columbia University, December 27 and 28, 1916.* Contains official reports, brief summaries of papers presented, and a list of members. *Reviews of Books:* C. E. Vaughan, *The Political Writings of Jean Jacques Rousseau, edited from the original manuscripts and authentic editions. With Introduction and Notes:* ALBERT SCHINZ. *Notices of New Books. Summaries of Articles. Notes.*

REVUE PHILOSOPHIQUE, May, 1917. *Autour de l'expérience de Wheatstone* (pp. 401–452): L. ENJALRAN. – The author seeks to disprove the claim of Wheatstone, Wundt, and Helmholtz

of the existence of exceptions to the law of corresponding points, concluding that in the several modes of binocular vision studied the laws of correspondence suffered no exceptions, and that the "privilege" of corresponding points is absolute. *Etudes de logique comparée* (pp. 453–469): P. MASSON-CURSEL (*first article*).—The purpose of the series is to reveal the relativity of logical ideas to the intellectual milieu in which they arise by an examination of the evolution of logical ideas in the European, Indian, and Chinese civilizations. The first article shows that the Buddhistic need for personal reflection is the force to which the civilization of India owes the cultivation of logic. *Revue Critique.* Thomas Whittaker, *The Theory of Abstract Ethics;* J. SÉGOND. *Analyses et Comptes Rendus.* José Ingenieros, *El hombre mediocre:* J. PÉRÈS. R. G. Collingwood, *Religion and Philosophy:* L. ARRÉAT. *Revue des Périodiques.*

Aliotta, Antonio. La Guerra Eterna e il dramma dell'esistenza. Napoli: Francesco Perrella. Pp. 221. L. 4.

Carroll, Robert S. The Mastery of Nervousness. New York: The Macmillan Company. 1917. Pp. 346. $2.00.

Crehore, Albert C. The Mystery of Matter and Energy: Recent Progress as to the Structure of Matter. New York: D. Van Nostrand Company. 1917. Pp. xi + 161. $1.00.

DeFursac, J. Rogues. Manuel de Psychiatrie. Paris: Felix Alcan. 1917. Pp. viii + 509. Fr. 7.

Freeman, Frank N. How Children Learn. Boston, New York, and Chicago: Houghton Mifflin Company. 1917. Pp. xiv + 322. $1.60.

NOTES AND NEWS

THE seventeenth annual meeting of the American Philosophical Association will be held at Princeton, New Jersey, on December 27 and 28, in acceptance of the invitation of the department of philosophy of Princeton University. The sessions will begin on Thursday morning at ten o'clock and will continue through Friday afternoon, and also through Saturday forenoon, if the association so decides. As announced in an earlier number of this JOURNAL, there will be two prearranged discussions between leaders selected by the Committee on Discussion. This committee has chosen for the new discussion the subject, Ethics and International Relations, while the other discussion will be a continuation of that of last year. In addition to these two discussions there will be opportunity, through two or more sessions, for the presentation of papers on various subjects

of philosophical investigation, and it is especially urged that such papers be offered, titles and abstracts (about 400 words) to be sent to the secretary not later than December 6. In making up the programme all titles and abstracts are submitted to the Executive Committee for its examination and approval.

THE first English number of *Inter-America* has recently appeared. It is made up of articles taken from magazines published in the other American countries and translated into English. Its publication began in May, of this year, the first three numbers being issued in Spanish and consisting of articles translated into that language from magazines of the United States. In the future the English and the Spanish numbers will alternate monthly. *Inter-America* was founded by the Carnegie Endowment for International Peace, one of whose objects is to cultivate friendly feelings between the inhabitants of the different countries through the diffusion of a clearer knowledge of each other.

THE twenty-sixth annual meeting of the American Psychological Association will be held on December 27–29 at Pittsburgh, Pennsylvania. The sessions will overlap the meetings of the American Association for the Advancement of Science which holds its convention in Pittsburgh from December 28 to January 2. The annual dinner will occur on December 27, at the Pittsburgh Athletic Association.

Dr. E. Helen Hannahs died in August, 1917. She was head of the mental testing department of the Neurological Institute, New York City, and formerly taught psychology at Adelphi College, Brooklyn.

Dr. Robert M. Yerkes, professor of psychology, is a major in the Sanitary Corps of the United States Army.

Professor G. W. Cunningham has been appointed associate professor of philosophy at the University of Texas.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

THE STATUS OF EPISTEMOLOGY

CERTAIN recent attacks upon epistemology are, if allowed validity, so destructive of the usual conception of philosophy that they demand serious consideration. Those who are convinced that epistemology is a genuine reflective science which is called out by the facts of both common sense and science are bound to ask themselves whether there has not been some misunderstanding. Is this severe indictment directed against epistemology as they conceive it, or against what they would regard as an outgrown interpretation of its setting and problems? I have asked myself this question while reading Professor Dewey's scathing attack upon epistemology, and have been led to answer—to use the appropriate phrase for such events—"Epistemology is dead, long live epistemology." The present paper will be an attempt to explain what I mean. Because the pragmatists have so often complained that their views, though containing new analyses and new modes of approach, have been given traditional labels and condemned without that sympathetic hearing to which they were entitled, I have hope that they will try to do for what claims to be a new movement that which they desired for themselves.

It may be a help to the interpretation of my thesis if I say that there is practically nothing in their theory of the growth and testing of concrete human knowledge from which I dissent. Where I part company is afterwards. They do not seem to me to take knowledge seriously enough. I know that a grieved expression will come over their faces at this saying, yet I can not help it. But my assertion needs explanation. In one sense, they take knowledge as seriously as I do or as any one could. Knowledge is valuable because it solves problems and is applicable to similar situations. It consists of ideas which are validated in specific, empirical ways. Such ideas enable us to control things in relation to plans and purposes which arise out of the experimental and adventurous character of human life. With this I agree. There is nothing of the quietist about my outlook. But the pragmatist has not been empirical enough. Perhaps

he has not had time to be. He has been so busy demolishing absolute idealism and all forms of the neo-Kantian movement that he has not been able to look beyond the negative side into the positive possibilities. And this brings me to my thesis. Achieved knowledge actually does claim to be cases of knowledge of reality. Examine the field of the individual's experience carefully and you will find distinctions which furnish the basis for this *empirical* reference of cognitive ideas to that which can not be literally present in the field of experience. The concrete individual does, and can, distinguish between his consciousness (his changing field of experience, not the psychologist's artifact) and a realm which his achieved ideas can intend as their object. So interested have the pragmatists been in the temporal dimension of experience that they have not made the exhaustive empirical study of the coexistential dimension that is needed. But such an examination would supplement their conclusions and enable pragmatism to outgrow that vagueness on, and hostility to, the questions of traditional philosophy which is a sore point with both them and their opponents.

It has been one of my convictions that modern philosophy rests upon an acceptance of the inability to carry through successfully any form of representative realism. Berkeley riddled Locke's representative realism with its naïve, copy notion and its assumption of an unknowable substance possessing qualities somehow reproducible in the minds of individuals. Hume admitted the validity of Berkeley's criticism. Kant did not go beyond this point, for his is an agnostic realism. The objective idealists left mental pluralism for a consciousness-in-general and cut the Gordian knot by simply eliminating the thing-in-itself. That is, they ignored the problem instead of solving it. Now the pragmatists are inheritors of this tradition. They come of idealistic stock epistemologically. While disliking absolutism, they equally dislike mental pluralism and any suggestion of a renewed attempt to carry through some form of representative realism by means of a new analysis of the meaning of knowledge. In one sense, they can not be blamed for this attitude. The neo-realists are equally dogmatic in their rejection of any hope in re-analyzing representative realism in the light of modern science and logic.[1] Comprehensible as this general attitude is, I believe it to be the great mistake of modern philosophy. May not the knowledge achieved by science be other than an attempt either to apprehend extra-mental entities or to gain images *like* such assumed entities? May it not consist of propositions referred to an acknowledged realm outside the individual's consciousness as accepted knowledge about it? The content of such knowledge could be empirically studied.

[1] Cf. *The New Realism*, pp. 4–5.

The tests of it would be those used in science and accepted by the pragmatists themselves.

I have given chapter and verse for the neo-realists. It is not difficult to do the same for the pragmatists. In his excellent address entitled "Beliefs and Existences," Professor Dewey demands a revision of the theory of inquiry, "a revision which should cease trying to construe knowledge as an attempted approximation to a *reproduction of reality* under conditions that condemn it in advance to failure; a revision which should start frankly from the fact of thinking as inquiring, and purely external realities as terms in inquiries, and which should construe validity, objectivity, truth, and the test and system of truths, on the basis of what they actually mean and do within inquiry."[2] But is not this disjunction dogmatic? Can we not give up any such ideal of knowledge as the one criticized and still hold that inquiry as a process must lead to some kind of knowledge as a product? *What kind of knowledge* is an empirical matter to be studied in the light of the facts.

In a recent book,[3] I have made a fairly complete analysis of the distinctions within the field of the individual's consciousness. It is my conclusion that the individual possesses the distinction between his consciousness and a realm which controls it, consisting of other persons and the continuous world of physical things. At the level of natural realism, this distinction allows the equal presence of both consciousness and what Professor Dewey calls external realities. It is at this level that the pragmatist wishes to remain. He may want to deepen both terms, but he is satisfied with the outlook. Situations are objective. While reading up recently for a course in which I had to interpret pragmatism, I reexamined Moore's *Pragmatism and its Critics*. I fully sympathize with his surprise that critics cried "subjectivism." They should have cried, "No epistemology at all." Professor Dewey has fortunately done this and it is their fault if they continue to accuse pragmatism of subjectivism. But Professor Moore's admissions are worthy of more attention than they have received. He writes: "On the contrary, *the* individual consciousness is regarded as an element inside the 'situation.' The 'situation,' if you will, is the pragmatist's absolute. *Just how the individual is constituted, just what is his rôle in the situation, are questions demanding more serious attention from pragmatists and absolutists alike than they have so far received.* The array of assumptions, masked behind the line of personal (and may I add social?) pronouns thrown up on every page of philosophic writing,

[2] *Influence of Darwin on Philosophy and Other Essays*, p. 186. Italics mine.
[3] *The Essentials of Philosophy*, Ch. X.

is, in Mr. Bradley's phrase, 'scandalous.' "[4] Now for the purposes of logical analysis, this outlook of a more flexible natural realism is adequate. Hence, the pragmatists have contentedly remained there, crying, "The situation is objective." And it is the critical realist who seeks to analyze the whole situation more thoroughly to see whether he must raise himself to a more reflective level. May not the whole objective situation *as experienced* be within the field of the individual's experience (his consciousness) and be a function of the doing and suffering of the individual—to use Professor Dewey's phrase—in dynamic relation to his environment? That is the thesis of the critical realist.

Let us now pass to Professor Dewey's interpretation of epistemology. "The problem of knowledge as conceived in the industry of epistemology is the problem of knowledge *in general*—of the possibility, extent, and validity of knowledge in general." What is this knowledge in general? He does not deny that we can make general statements about knowledge, and asserts that the problem of attaining these general statements is a genuine one. In other words, the science of logic exists. What he has in mind when he speaks of knowledge in general is a kind of knowledge which implies a difference between experience and the world. "The problem of knowledge *überhaupt* exists because it is assumed that there is a knower in general, who is outside the world to be known, and who is defined in terms antithetical to the traits of the world."[5] His argument thus runs that the old setting of epistemology implied a supernatural knower not immersed in the world as a highly organized part of it. But I challenge Professor Dewey to be more naturalistic in his thinking than I, and yet I believe that the various human organisms doing and suffering in their dynamic continuity with their environment achieve knowledge within their consciousness, a knowledge empirically referred to the world of which they are part. If this empirically motivated reference, which yet involves no literal transcendence, comes under his condemnation as knowledge in general, my reply is that he is not a true empiricist. He has been so busy fighting old supernaturalistic views, pre-evolutionary views, that he dogmatically assumes that epistemology implies some sort of ontological dualism.

Thus my understanding of experience is essentially the same as his. I claim that I have learned from James and himself to take experience as it is given, as concrete, full of relations and references, undergoing reconstruction, an experience which is a function of many conditions. But I hold as he does not, though on the whole

[4] *Pragmatism and its Critics*, p. 146.

[5] *Creative Intelligence*, p. 33.

James did, that each individual has his own experience which he can not literally share with another. The mistake of the Chicago School has been this too facile adoption of experience-in-general. In spite of himself, Moore seems to be uneasily conscious of the problem. He stills it by an appeal to the teaching of social psychology. But all that the social psychologist teaches is that the individual's consciousness is controlled by his relations to his fellow men. Hence, it is the pragmatists who lean on something *in general.* Mental pluralism does not involve social atomism. Mental conditions are functions of individuals in dynamic relations with their environment, whether organic or inorganic, whether human or animal.

I have suggested certain reasons why the pragmatists tend to stop their analysis with this blanket-term, experience, which means the objective situation. To bring them together, they are (1) the identification of consciousness with a psychological artifact instead of with the actual field of the individual's experience; (2) the acceptance of naïve realism with thought as a process within the objective field; (3) the unconscious influence of the tradition of objective idealism as against realism; (4) the assumption, due to that tradition, of the impossibility of working out a new form of representative realism. Thus I am convinced that Professor Dewey has a whole epistemology without giving it its traditional name. Evidently, he is persuaded that his outlook follows so inevitably from the biological facts that no other interpretation of these facts is possible, a perilous assumption for a philosopher to make and near akin to dogmatism. As I understand the implications of his argument, any other position is supernaturalistic and dualistic. It is this implication that I challenge.

But criticism is not enough. Let me suggest another position and define epistemology in relation to it.

Actual consciousness is the concrete field of the individual's experience. At the level of natural realism, this field is divided into two elements, consciousness and the external objects. Reflection, however, forces the individual to advance consciousness to include the whole field. As he thinks, solves problems, the relations and characters of these objects change. They secure meanings and inter-references which are of use for the furtherance of the plans of the individual. Once we realize that this flexibility of objects is due to the fact that they are objects within the individual's experience (consciousness) the conflict with the meanings of natural realism, commonness, independence, and perdurableness, ceases. But the problem of the nature of knowledge arises in an acute form. These given objects must be mental substitutes for a controlling realm to

which the individual organism must adapt itself. They are valuable as means of adjustment; they are cues for behavior. They are not cases of knowing (Professor Dewey is perfectly right there), but of given experience. They may furnish the foundation and means for knowing, but they are not other than they are experienced as.

But reflection will not rest here. The structure of the field of the individual's experience is realistic, as the pragmatists admit. The nature of this structure is an empirical problem. Examining it, I have come to the conclusion that there are two meanings for knowledge within it. The one has been stressed by traditional philosophy and, to-day, by neo-realism. It is that knowing is a case of presentation or presence. So far as Professor Dewey is a naïve realist, he implicitly admits this, but refuses to see any problem in it.[6] It is not knowing, as he understands that term. The second meaning of knowledge is cognitional reference, intended meaning, which may be true or false.[7] Let us examine this second type of knowing somewhat carefully.

This *empirical* transcendence is described as follows: "The thing meaning is one thing; the thing meant is another thing, and is (as already pointed out) a thing presented as not given in the same way as is the thing which means. It is something *to be* so given." In other words, we can think of something not present, but this something must in its turn be present. I accept this interpretation for the level of natural realism. But the question I would raise is: May not the facts within the field of experience in its co-existential dimension enable and force reflection to distinguish between the field of the individual's experience and that which controls it? If so, may not this empirical transcendence be utilized as the mechanism for the reference of cognitive ideas to that which is outside of consciousness? Such is the theory of critical realism.

And here we come back to the hasty alternatives assumed by Professor Dewey. "But the non-empirical account of this transcendent (or beyond) relationship puts *all* the error in one place (*our* knowledge), and *all* the truth in another (absolute consciousness or else thing-in-itself)." Not at all. In the first place, reference is never a literal transcendence. In place of "empirical transcendence" I would prefer to say "empirical reference." In the second place, truth and error are values attached to ideas which claim to be cases of knowledge, ideas which are the end-terms of

[6] That is, he refuses to break the objective situation (experience) into two parts which must be gotten together by an omnipresent cognitive relation. I refuse, but because I think that the whole field is mental.

[7] See the excellent account of empirical cognitional reference in his *The Experimental Theory of Knowledge.*

thinking, what Professor Dewey calls beliefs. I can not see, for the life of me, why things-in-themselves (the physical world) should be spoken of as possessing truth. They are no more true or false than our ordinary run of experience is.

But the real reason why so many thinkers have not considered this possibility of empirical reference to what lies outside the field of experience by means of distinctions within experience is the assumed impossibility of achieving an intelligible view of knowledge. The copy notion of Locke is admittedly bankrupt. But the truth is, that Locke never had a serious analysis of scientific knowledge. It is this which I have been trying to do.

I have been led to distinguish between a true and a false ideal for scientific knowledge. The false ideal is connected with the outlook of natural realism, *viz.*, that knowledge is the presence of the thing known. Such is the view of presentative realism. Lockian realism held that knowledge is the presence of something *like* the reality to be known, the presence of a mental substitute which is cognitively just as good as the reality, which can't be present, because it is like it. But I hold that this view and ideal of knowledge have led men on the wrong track. Knowledge consists of ideas which are empirically referred to the physical world as knowledge of it. It has nothing to do with either the presence of the physical world to inspection or the presence of a mental substitute like it. In other words, I would transform representative realism by connecting it with the second meaning of knowledge, with propositions empirically referred to the physical world as knowledge about it. When this new setting is once understood, it will at once be realized that the valid, traditional objections to representative realism do not apply to this keener interpretation of actual scientific knowledge. The old ideal of direct, or indirect, apprehension has been discarded. The result is that the philosopher has only to analyze the actual content of scientific knowledge to see what this knowledge about the physical world consists of. Does it not consist of control falling into such categories as position, structure, dynamic properties, behavior, *etc.*? And this is non-apprehensional knowledge.

Now the interesting fact is that the critical realist explains perceptual illusions in the same natural way that Professor Dewey does. Why talk about the real object in relation to a knower when what is given is one real thing in dynamic connection with another real thing? Of course, for the critical realist, the knower is a real thing, the organism; although knowledge is not perception, but rests upon it in the way that science shows. I quite agree, again, that the body ought to make a difference to the stimuli coming to it. Since knowl-

edge is not, for the critical realist, an apprehension, this actual dynamic relationship between conscious organism and environment does not set him an unsolvable problem. Only to the naïve realist of the apprehensional tradition is this the case. And I must frankly assert that Professor Dewey, as a naïve realist, avoids it only because he refuses to crawl out of his blanket terms, experience and objective situation. After all is said, I honor the neo-realist for his dogged persistency.

What, then, is epistemology? It is the reflective science which studies the nature, conditions, and development of human knowledge in the light of the available facts. It begins with a reflective study of the individual's field of experience, his distinctions and views of knowledge, and passes gradually to an hypothesis which will best harmonize the known facts. Approaching epistemology in this manner, I have been led to raise myself from the level of natural realism to that of critical realism. The result has been a view of knowledge which meets the demands of modern science and fits in with a flexible naturalism.

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STRUCTURE[1]

WE speak of the structure of buildings, poems, plants, animals, machines, states, and even atoms. The fact denoted by the term is of such importance for our knowledge and use of things that nearly all inquiry is devoted to the discovery of structure in specific cases. Moreover, this discovery has an obvious finality about it. Its explanatory value is high and satisfying. For whatever the end may be which any operation serves and whatever the cause may be which initiated the operation, our curiosity is largely satisfied and our efficiency is enhanced when we have discovered the structure to which the operation conforms. A watch may be made to keep time; if we ask why it keeps time, we are not satisfied by saying because it was made for that purpose by a watchmaker, but we are satisfied by knowing its structure. Having this knowledge we are able to increase the precision of watches. The eye may have been made in order that we might see, but, if so, we do not thereby understand vision. We understand it rather when we have discovered optical structure. Then, too, we are in a position to improve defective vision. The fact of structure is obvious. Illustrations of it, how-

[1]Delivered at the meeting of the American Philosophical Association, December, 1916.

ever, even if they are trite, may serve to emphasize the fact in some of its apparent varieties.

The user of materials may do many things with them provided that his use of them conforms to their structure. This is well illustrated in any problem of maxima and minima, as, for instance, the problem of determining what areas may be enclosed by a line of given length. Here the particular areas are limitless in number, but they are all limited by a single principle. This principle defines precisely the structure to which the operation conforms and within which, so to speak, it is confined, so that we know that the minimum area is the line and the maximum area the circle. This illustration may be paralleled indefinitely. Proper selection from among the illustrations would lead to recognized sciences which set forth the discovery of the structures within which are confined the operations with which these sciences deal. Mechanics would be one of these sciences. And it is clear that no matter how much mechanics may vary in its concrete discoveries or in the terms and instruments it finds best suited to its use, it will not vary in its attempt to discover the structure to which the equilibrium and displacement of bodies are confined. So far as this structure is concerned our conception of what bodies "really" are seems quite irrelevant. They may be the concrete things we perceive them to be, they may be "masses of matter" or "congeries of sensations," they may be molecules, atoms, or what not, their equilibrium and displacement conform to a precise and definite structure. Mechanics thus testifies to the fact of a structure of a particular kind within which and subject to which numberless operations of a particular kind can occur.

Chemistry affords another example. Not only do elements combine in definite ways, but the same elements subjected to different structural arrangements seem to produce an almost limitless variety of compounds. Ultimately, all chemical structures may be discovered to be mechanical. In that event we should recognize a welcome scientific simplification and an extension of the domain of mechanics. Such a possibility ought not to be prejudged even if in many chemical operations time appears to be a different factor from what it is in mechanics generally. To the latter science time seems to be relevant only as it is measured in terms of simultaneous displacements, while in chemistry successive or genuinely temporal displacements often seem to be involved. Although a remark of this kind ought not, in the present state of our knowledge, to be accepted as final, it serves, nevertheless, to indicate the possibility that structures may be matters of time as well as of space.[2]

[2] "The present physical and chemical structure of organism must be explained not only in terms of atoms and molecules, but also in terms of the his-

Biology seems to confirm this possibility. It has advanced in recent years to remarkable determinations in detail of the structure of living beings and of their operations. Recent experimental work on heredity, instinct, growth, and descent has revealed to us what we may call living structures with a fullness hardly suspected fifty years ago.[3] And it is these structures rather than any assumed vitalistic principles which, as we are wont to say, "accounts for" the variety of forms and operations. But since living is not something spread out in space, but something enduring in time, living structures seem to be characterized temporally in a way different from mechanical and chemical structures. A cell is not simply what it appears to be under the microscope. It seems to have also what we might call a suspension in time which can be ascertained only by allowing to it its proper duration. It is not only so much chemical substance encased, so to speak, in a particular mechanical structure, but it is also so many minutes or days of a specific kind of growth. Accordingly, its growing seems to be subject to a structure suspended in time fully as much as the displacement of its parts is subject to a structure extended in space. Conformably with the latter it may divide and conformably with the former its successive divisions result in a typical living form. In biology, therefore, we apparently meet with structures which, while they exhibit definite mechanical and chemical characteristics, exhibit also characteristics which can not be defined in these terms. These structures are of *kinds;* and when we exhibit definitely the kind in any instance, we point not only to a particular mechanical and chemical fact, or series of such facts, but also to a life history.[4]

Psychology, at present, is following the lead of biology, especially when the latter science deals with highly organized living beings. Many of the operations which we call mental are so evidently vital that a distinction between the mental and the vital is more often confusing than helpful. If we are to make a sound distinction at all, our considerations hitherto might lead us to make it in what we may call structural terms. In other words, if there are operations or activities of living beings which indicate a structure different from the mechanical, the chemical, or the biological, then we may

tory of living matter upon the earth." Comstock and Troland, *The Nature of Matter and Electricity*, New York, 1917, p. 194.

[3] See, for example, T. H. Morgan's *Mechanism of Mendelian Heredity* (New York, 1915), with its extensive references.

[4] I suspect that it is a confused recognition of the fact of life histories, as different from one another as different chemical compounds, that leads so repeatedly to vitalistic theories in biology, just as it is the failure to recognize the structural character of life histories which makes many "mechanical" interpretations of life so unsatisfactory and so unconvincing.

have a means of distinguishing mental from vital processes which may be advantageous. Such a difference appears to be the fact, for we recognize a kind of structure which we call logical. Whichever of the current attitudes toward logic we may take, we seem to be confronted with the fact that the operations of thought are subject to a structure which is not like that involved in the displacement of bodies, or in chemical combinations, or in life histories. The syllogism may be an inadequate expression of this structure, but it is an historically instructive one and shows how different the structure of thought is from the other types of structure we have considered. Every examination of the operation of implying or inferring seems to show the same difference. Ideas and propositions, whether spoken or unspoken, are subject in their movement to structural principles as definite and precise as the principle involved in the simple illustration of the line and the area with which we started. And these principles have that kind of aloofness from time and space which we indicate by the ordinary word "mental" and the extraordinary word "transcendental."

The foregoing illustrations naturally suggest the generalization that a structure of some sort is characteristic of all operations universally. In other words, whatever else the world or the universe or "reality" may be, it is at least a structure or a system of structures. Or we may say that it has structure as something genuinely, universally, and metaphysically characteristic of it. Whether it has one structure or many will be left here unconsidered. We shall be content to follow the lead of our illustrations and say that it has at least spatial, temporal, and logical structures which may be reducible to one type, but which will be left here without any attempt so to reduce them. Nevertheless, we shall speak in what follows of the fact of structure generally without distinguishing its apparent kinds.

Structure is a discovery and not an hypothesis. Naturally the discovery in particular cases may be generalized for cases not yet examined, so that belief in the universality of structure becomes a controlling belief. It may lead us to refuse the supposition that there is any operation which is structureless. But we do not begin inquiry by first supposing that there must be structure and then find that our supposition is borne out by the facts. Structure is met with in quite a different way. It is met in action and practise, by setting one stone upon another, for instance, and finding that stones must be set in certain ways if they are to stand up as a wall. The fact found out in such ways as this imposes itself on us, so to speak, confronts us, obstructs us after the manner of a brute fact, so that we must regard it as belonging to the subject-matter into

which we inquire and as independent of the fact that we discover it by inquiry. If we apply to it the distinctness current in philosophical usage, we must say that it is objective and not subjective, that it is *a posteriori* and not *a priori*, that it is empirical and not transcendental. In short, it is not an hypothesis invented by the mind for purposes either of explanation or control. It is a fact discovered, and discovered like other facts, as, for instance, that Saturn has rings.

Consequently there are many philosophical considerations irrelevant to it and on which it in no way depends. Its status as a genuinely discovered fact is independent of realistic and idealistic theories. It confronts materialism and spiritualism equally and unequivocally. Every brand of epistemology must bow to it, no matter how each brand may attempt to account for it, since each brand discovers it first and attempts to account for it afterwards. These statements need no other evidence than the recognition that the philosophical considerations implied by them, if they deal with structure at all, deal with it as a discovered fact which they attempt to elucidate or explain. In that sense only are they at all relevant to it. But they are in no sense relevant to its obviousness, its obstructiveness, or its bruteness. Any of these philosophies may be entertained without any alteration in the fact of structure either as a discovery of a general nature, or as a discovery specific in characteristic details. It stands out thus as one of the absolute metaphysical facts to which all speculation is subordinate.

Although philosophers may busy themselves with attempts to explain structure, there is no explanation of it, if by explanation we mean the finding of a reason why it should be. Of course there is explanation in the sense of making plain what structure is in specific cases and even what structure is in general. There is explanation also in the sense of showing what consequences flow from the fact of structure itself. But there is no explanation in the sense of showing why there is structure or why there is structure of any particular kind. A watch has a particular structure by virtue of which it keeps time; but if we ask why it has that structure, it is difficult to make clear precisely what we mean by the question. We can hardly say that the watch has its structure in order to keep time or because it keeps time, for manifestly its structure and its time-keeping go together simultaneously and not successively—the one is in no sense because of the other or for the sake of the other. To be sure, watches have been made in order that time may be kept, and that fact may show us why watches have come to be, but it does not show us why a watch in order to keep time or in just keeping time, has a structure

of a particular sort. The discovery of what the structure of a time-piece is or has got to be, if time is to be or is kept, is a very ultimate kind of discovery. It does not lead beyond itself. And what is true of the watch is true generally. God may have made all things after the manner in which a watchmaker makes a watch, for the purpose of having certain things done, but his purposes could not explain to us why things have the structure they are discovered to have. His purposes explain only what uses of structure he has chosen. And so the discovery that all things have structure is a very ultimate kind of discovery. It is absolute because the consideration of origin is quite irrelevant to it. No matter how things have been produced nor when, no matter whether they were ever produced or not, structure is an absolute fact about them, the kind of fact that does not lead beyond itself. There is no explanation of it because it is the kind of fact that does not require explanation.

All this is saying again that structure is really a discovery and a discovery of an absolute kind. That is, the inquiries which lead to the discovery of structure terminate absolutely in that discovery. Has structure been discovered or not? If it has been discovered, that ends the matter. From which it is clear that structure is not imposed upon things, but is something constitutional to them, so to speak. A watch does not have its structure imposed upon it by its maker. Neither does anything else. This is really saying again that structure needs no explanation, that the question why anything has structure is an idle question, but it is saying it in another way. Since structure is a discovery it may, like other discoveries, often be a surprise. Historically it seems to have been a surprise when made on a large scale. That things are fluid, so to speak, structureless, a kind of flux without law or order, subject to whim and caprice is not an unnatural supposition, so that the discovery of structure may come as a surprise and may lead to the question how was structure imposed upon the flux? But the discovery of structure in any specific case always disposes of this question by showing its futility. No one who understands the structure of a watch is surprised by it. We may be surprised at what is accomplished by means of the structure before it has been discovered, but when it is discovered we are not surprised that these things are accomplished by its means. Put in its most general form, the idea is this: order and uniformity cease to be objects of surprise when once structure has been discovered. There is then no longer any motive for accounting for them. They are not imposed upon the flux, but the flux exposes them in its movement. Structure is thus evidently a metaphysical discovery absolute and final.

Knowledge of structure is an eminently satisfying kind of knowledge. It reduces impressions, opinions, convictions, and beliefs to what we call science. Never do we understand anything more completely and finally than when we understand its structure. Such knowledge is in the highest sense explanatory, because it leaves nothing to be explained. By that I do not mean that it puts an end to all intellectual interest or that the discovery of structure is not progressive. I mean rather that did we know the structure of things thoroughly, all our intellectual interests would become practical and inventive. Science would become dogmatic while art would flourish. Since such complete knowledge would enable us to predict the consequences of any structural combination, all our ingenuity would be employed in inventing new combinations adapted to secure desired ends. All arts foreshadow such an ideal and especially the mechanical arts. For even if the principles of the classical mechanics are now under suspicion it is clear that their acceptance as so much settled dogma has been marvelously fruitful in inventions for man's use and comfort. And so it is that knowledge of structure gives us the great desiderata of all knowledge, namely, science and prediction, on the one hand, and control in the interest of desired ends, on the other.

Such complete knowledge, even if attained, would probably not put an end to attempts to conceive existence generally in terms which will satisfy human aspiration. But these attempts would not increase knowledge or add a new department to science. They would not, therefore, be either needless or profitless. They would be instances of an art which transforms existence by refining, beautifying, and ennobling it as does a picture or a song. In a world where pictures are painted and songs sung, it would be quite ridiculous to say that the imagination ought not to leap to a vision of providence or of a moral order. For a knowledge of structure would show that poetry and religion, as clearly as anything else, are not miraculous, and that they are not unnatural. But it would show also that they are not scientific, and that they do not increase our knowledge. Yet they do beautify existence and enhance the control of it. They put into the world heavenly pictures, so that he who contemplates them may be the more at home in this physical world.

There is apparently little difference, if any, between structure and what is called substance by metaphysicians. The latter term is more ambiguous in its usage and has associated with it many conflicting ideas. Yet when we speak of substance as that which exists in its own right, or as that which persists through all changes, or that which is defined in its own terms, or that which stands under,

or as that which has attributes, or as that the knowledge of which is conclusive and final, we are using expressions which seem equally applicable to structure. Indeed, when the term substance is used to identify anything beyond the particular subject of discourse at any time, it seems to carry us to much the same conclusions as a consideration of structure carries us. But the term structure has the advantage of freeing us from many perplexing associations. To speak paradoxically it is less substantial. It means something absolute without meaning God. It means that without which nothing can be or be conceived without meaning something which should be eulogized or made an object of emotional attachment. It is more expressive than the term substance is of an ultimate fact actually discovered. But our habit of thinking of structure as something possessed by the world or by things, suggests the advisability of linking it more closely with the older term. For although we may say that a watch has a certain structure we do not thereby mean that the watch is more ultimate than the structure it is said to have. And so with the world—it does not possess its structure, but is rather its structure when we wish to express a final and absolute fact about it.

This linking of the terms structure and substance enables us to speak of structure more naturally as a subject to which predicates may appropriately be attached. We may then say not that the world has structure, but that structure is the world. In other words, the attempt to form a conception of all things together or to speak of the universe or nature generally is an attempt which does not successfully carry us to the recognition of a single complete and self-enclosed whole of things, but rather to the fact that however endless the succession of events may be, or however manifold the number of identifiable things may be, ultimately there is unity of structure. And it is this discovered fact of unity of structure rather than some supposed wholeness with nothing left out which may properly be called the world or the universe. We might then say that beyond structure there is nothing, without meaning that within structure everything past, present, and to come is already somehow included. We should mean rather that all there is to structure is completely knowable because structure is itself complete, but that it is the only thing of which this can be said.

Linked with this completeness of structure is its principal attribute—as I should like to call it, still using substantial terms. That attribute is inertia. I have already indicated that structure is discovered as a brute fact. It is met with not by way of hypothesis or conjecture, but by way of opposition or resistance. Everything that happens conforms to it, but it of itself does nothing. Our orig-

inal illustration is here again suggestive. The structural principle of the many areas is a principle to which each of them must conform. Figuratively speaking, it sets a limit beyond which they can not go. But it produces no single area, although an infinity of areas is producible. As over against them structure is absolutely inert. And this seems true generally. Structure is the inert principle of all existence. On this fact itself I do not now dwell, although the derivatives of it are interesting and illuminating. I wish rather to venture one further generalization, namely, the identification of structure with matter when matter is metaphysically conceived. When so conceived—and here again we seem forced into paradoxical statements—when so conceived, matter loses its material qualities. These qualities, like solidity, fluidity, *etc.*, as well as all the so-called secondary qualities, have long appeared to men as convertible into one another and to afford no absolute basis for exact determination. Even the conception of chemical elements is seriously attacked on both theoretical and experimental grounds. But the conception of structure remains intact and to this conception still cling the so-called primary qualities of matter like inertia and those which are only quantitatively and relationally expressible, like weight. If the materials of things are convertible, it seems evident that in no sense can any one of them be more final and primary than any other; but if all are convertible in terms of changeless structural principles, these latter would appear to give us just that absolute conception of an inert factor in existence which has long borne the name of matter. This proposed identification of structure with substance and with matter is here only suggested. I hope at another time to elaborate it.

Indeed the points put forward in this paper are all in need of elaboration. But it has occurred to me that they might prove suggestive as indicating a field of metaphysical inquiry apparently free from the controversial questions of much recent philosophy. The considerations here suggested seem to me to afford scope for inquiry and discussion independent of mooted questions about the truth of perception or the possibility of knowledge.

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THE FIRST ANTINOMY OF KANT

THE thesis of Kant's first antinomy is unsound because in the course of the proof a hypothesis is implied which contradicts the orignal hypothesis. The passage in the Meiklejohn translation runs as follows:

THESIS

"The world has a beginning in time.

PROOF

"Granted, that the world has no beginning in time; up to every given moment of time, an eternity must have elapsed, and therewith passed away an infinite series of successive conditions or states of things in the world. Now the infinity of a series consists in the fact that it never can be completed by means of a successive synthesis. It follows that an infinite series already elapsed is impossible, and that consequently a beginning of the world is a necessary condition of its existence. And this was the first thing to be proved."

The proof may be paraphrased as follows:

THESIS

The world has a beginning in time.

(1) Suppose the contrary, that is, that the world has no beginning in time.

(2) Then an infinite number of hours must have elapsed up to the present.

(3) But time, up to the present, is completed, and (4) no infinite series can be completed.

Leaving the paraphrase, (4) is false unless we suppose that the infinite series *has a beginning,* which contradicts the hypothesis (1).

Let us illustrate the point. If an infinite series has a first term and each term has a definite successor, there can be no last term; for example, the infinite series

0, 1, 2, 3, . . .,

beginning with zero, can have no last term.

But an infinite series may have a last term provided it has no first term, for example, the series

. . . 3, 2, 1, 0,

ending with zero, but having no first term, is infinite.

Therefore, to say that a series is not infinite because it has a last term is to say that it has a first term; for example, the series

3, 2, 1, 0,

which has a last term zero, is not infinite because it has a first term, 3.

But it is this hypothesis (that the time series has a first term) which Kant explicitly rejects at the outset of his proof. His fallacy is of the following familiar type. To prove that on a clear day it rains.

Proof. (1) It either rains or it doesn't.
(2) It doesn't; throw out that case.
(3) Therefore, it rains.

Apparently, the only alternative for one who wishes to defend Kant's position is that the mathematical notion of an infinite sequence is self-contradictory. Readers of this JOURNAL will find the notion set forth in detail in an article "On the Notion of Infinity," August, 1915. If the mathematical position is sound, then Kant's position is unsound and *vice versa*. Kant himself confuses the *infinite*, which he pretends to respect, and the *indefinite*, for which he has no regard. Kant's indefinite is the mathematical infinite, and what Kant's infinite is I am unable to make out. For me it is without meaning.

CHARLES W. COBB.

AMHERST COLLEGE.

SOCIETIES

NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on Monday, April 23, at Columbia University. The following papers were read and discussed:

The Speed and Accuracy of Motor Adjustment.—JOHN J. B. MORGAN.

An experiment in which the subjects were instructed to pull with their maximum force weights attached to a rope showed, from the graphic records obtained of each pull, that when the size of the weights is unexpectedly changed the subject adjusts himself by a change in force rather than a change in the speed of his pulls. The time required to make this adjustment is less than $\frac{1}{20}$ of a second (much less than the simple reaction time) and hence must be a reflex or a local muscular phenomenon.

In another experiment where the subjects were instructed to pull four different weights with the same force, and were allowed before pulling a new weight to make trial lifts, it was found that the *force* was much more radically changed with the different weights than the *time*.

These two experiments show that the force an individual uses varies either by a reflex or local muscular adjustment with the resistance encountered; and that with the extent of a movement re-

maining the same, one can adjust only in a very crude way the time of his movements so that with different weights the resultant physical force will be the same.

Measurement of Prospective Teaching Ability.—G. C. MYERS.

Training school students in several classes of from 16 to 28, who had worked together in the same groups from five to ten months, ranked one another in various school subjects, in prospective teaching ability, and in numerous traits of character. Some of these factors were also ranked by the teachers. Furthermore, ten traits of personality were ranked in the order in which they were esteemed. Correlations between the various subjects and traits by the students and by the teachers, and between the ratings by the teachers and those by the students, are being determined, variability in rankings, and correlation between the esteem of a given trait and the possession of that trait. Only those data bearing on prospective teaching ability were reported.

The correlations between teachers' and students' ratings in prospective teaching ability were as follows for five classes of students: .14, .45, .68, .86. The correlation between students' judgments of prospective teaching ability and school subjects was .85; between prospective teaching ability and likableness .90; between general intelligence and school subjects .89; between prospective teaching ability as judged by the teachers and school subjects .62. The correlations between prospective teaching ability, personality, general intelligence, and ten traits of character are given in the following table:

Correlation[1] of	P. T. A.	Personality	General Intelligence
Address	.892	.745	.749
Culture	.597	.818	.573
Enthusiasm	.674	.751	.683
General intelligence	.824	.442	—
Optimism	.239	.568	.145
Personal appearance	.523	.736	.292
Sincerity	.565	.336	.704
Sympathy	.454	.815	.351
Tact	.652	.892	.570
Vitality	.589	.773	.573
Personality	.654	—	.582

The indications are that the students are better judges of who will make a good teacher than the teachers are. The very low correlation between the ranking of the teachers for prospective teaching ability and that by the students may be attributable in part to the

[1] Total of the rankings in the ten traits with ranking in general personality correlated .931. These ten traits generally considered important in teacher ratings were ranked in the following order: culture, personal appearance, general intelligence, sincerity, sympathy, tact, optimism, address, vitality, enthusiasm.

fact that the students put more emphasis on general intelligence as an index of prospective teaching ability than the teachers do, as indicated by the correlations. The fact that the teachers vary far more for the selected groups than for the other groups is also suggestive.

Some Problems in Dream Interpretation.—Lydiard H. Horton.

The Law of Effect in Relation to Neuroses.—T. H. Ames.

The application of Thorndike's Law of Effect to functional nervous diseases is instanced in three cases of hysteria, to show that symptoms which are apparently annoying are subjectively satisfying to patients in that they are relatively less annoying than other responses to the same causing stimuli would be. With Professor Thorndike's approval, the following re-wording of his law was made: Responses which are accompanied or closely followed by discomfort and which are continued with strengthened connections with the situations give relatively more satisfaction than annoyance in that other responses to the same situation would give more annoyance.

The Effect of Alcohol upon Habit Formation in White Mice.—Halsey S. Bagg.

The present report is a preliminary account of a series of experiments that is now under way, designed to test the effects of the inhalation of alcohol fumes upon the formation of maze habits in mice. The results so far obtained are of sufficient interest in themselves to warrant their being placed on record at the present time.

The method of treatment was similar to that used by Dr. Stockard in his work on guinea-pigs. The mice were placed in a glass jar upon wire netting over cotton wet with alcohol. The mice were left in the jar until they were thoroughly intoxicated, as indicated by their inability to stand. The maximum treatment was one hour per day for each mouse.

Thirty mice, about 28 days old, were divided into two equal groups; in one group the rate of learning was first determined in a simple maze, and the mice were treated by the inhalation method without interrupting the maze test; while in a second group the alcohol treatment and maze learning began at the same time. In each case the mice were first tested in the maze, allowed to feed for about 30 minutes, and then given the alcohol treatment. They were not again tested in the maze until the following day when they appeared completely recovered from the previous treatment. Normal mice, not treated by the alcohol fumes, but tested in the maze at the same time and under similar conditions, served as controls.

The results for both groups of alcohol mice showed a decided slow-

ing up in the process of habit formation. In the first group the animals that had previously made normal records, without the alcohol treatment, were found to make slower average records when the treatment was instituted, and in like manner, the second group showed that when the alcohol treatment and the maze learning were begun at the same time the daily records were again inferior to those of the control group.

A. T. POFFENBERGER,
Secretary.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

A Realistic Universe. JOHN ELOF BOODIN. New York: The Macmillan Company. 1916. Pp. xxii + 412.

May a pragmatist be a metaphysician? And if so, what sort of metaphysics would it be? An affirmative and constructive answer to these questions is given by Professor John E. Boodin in *A Realistic Universe,* a rather large volume of 412 pages.

It was the boast of Kant that he had banished metaphysics from the domain of philosophical inquiry. Philosophy as criticism must thenceforth confine itself to a theory of knowledge. It has seemed that pragmatism, at least here in America, has been advancing along the lines marked out by Kant. It began as a method, advanced to a theory of truth, continued as an analysis of experience, and is now applying this analysis to the concrete problems of life and conduct. It might well be termed the new criticism. The center of gravity in philosophy, due to the pragmatic criticism, has been rapidly shifting from metaphysics to an analysis of moral, social, economic, and political problems.

In view of this apparent abdication of metaphysics, and the drift of philosophy toward the social sciences, the appearance of a book on pragmatic metaphysics is both significant and interesting. I don't know that the pragmatist has so much ignored metaphysics as that he has been interested in doing other things.

A Realistic Universe is a metaphysical treatise written from the pragmatic point of view issuing in a doctrine of realism. Pragmatism, metaphysics, realism—that is the combination effected in Professor Boodin's book, an alliance requiring a good deal of insight and adjustment to maintain.

In general, one may say that the possibility of metaphysics depends on the power of thought to comprehend reality. The new realism can easily issue in metaphysics because the new realist takes

such a view of the function in thought that metaphysics is a possibility. When Kant said "the rational is the phenomenal," of course thought was inadequate to arrive at a knowledge of things in themselves. But when Hegel pointed out that the phenomenal *is* the real, and that, therefore, "the real is the rational," the relevancy of thought to reality seemed established. New realism is just as extreme an intellectualism as Hegelianism. Its underlying assumption is that what is true for intellectual analysis is at the same time true for reality. The new realist equates reality with logical analysis, just as when Porphyry was dichotomizing the concept of being, he thought it was being that he was dividing. For new realism, as for Hegel, logic and metaphysics are one and the same thing.

Bergson, on the other hand, denies outright the relevancy of thought to reality. There is no approach to metaphysics through intellectual analysis.

Now the pragmatist accepts neither the extreme intellectualism of the realist, nor the anti-intellectualism of Bergson. It is for this reason that the possibility of a pragmatic metaphysics is an interesting inquiry. Can you accept the pragmatic doctrine of the origin, nature, and function of intelligence, and at the same time, with intelligence as your instrument, give a constructive metaphysics? Professor Boodin thinks that you can. He writes: "Let us give thought a fair field at the outset. Let us not discredit the instrument because it has a character of its own. It could not be an instrument otherwise. The universe in its own selective movement forged it, in the long ages, for just such a world as ours and such needs as ours" (p. xvi.). Pragmatic metaphysics steers a middle course. Between life whole, but unanalyzed (Bergson), and life analyzed, but dead (new realism), there is the experimental alternative of *vivisection.*

Professor Boodin is very clear in his initial definitions. "As applied to metaphysics the pragmatic method means that we must judge the nature of reality, in its various grades and complexities, by the consequences to the realization of human purposes, instead of *a priori* assumptions" (p. vii.). By reality, then, he means the differences made to our reflective purposes. "These differences are capable of being systematized into certain attributes—*summa genera* of differences not further reducible" (p. 385). There are five such attributes which constitute the subject-matter of metaphysics. They are: energy, consciousness, space, time, and form. These attributes are not in any sense ideal or phenomenal; they are genuine aspects of reality. Therein consists the author's realism. The book is, therefore, divided into five parts, each treating separately one of the five attributes.

Part I. is on "Being" or the "stuff character of reality." By stuff the author means energy. This division of the book is especially valuable as containing a philosophical analysis of the scientific concept of energy. It is a resumé of the position of contemporary science. Part II. deals with the attribute of consciousness. The subject of the nature of consciousness is the topic which has received a great amount of attention during recent years. The chapter entitled "Examination of Theories" contains a fairly comprehensive account of current theories. The author's own view has much in common with the diaphanous theory of Mr. G. E. More. Consciousness makes the difference of awareness. It is a "neutral light," colorless, without differentiation, mechanism, or efficiency. Parts III. and IV. deal with space and time, respectively. Each is treated in realistic fashion, its reality depending on the difference it makes to our reflective procedure, space making the difference of "translation," and time that of "transformation." The author's treatment of time has much in common with that of Bergson, though it was worked out in independence of him. The fact of change, of process, of productivity demands the objective reality of time.

Part V. treats of form, that is, of the direction and evaluation of things. Nowhere has the pragmatic reaction broken more abruptly with tradition than in its treatment of progress. Modern philosophy has presented progress as a sort of pensioning on the part of the absolute. Pragmatism has modified the absolutistic doctrine of ready-made objectives into a doctrine of projectives, they being framed by intelligence as means of advancement and control. Where are things headed? That depends, the pragmatist is likely to say, on where you want them to go. Give a circle consciousness and it will go straight to circularity. But then circularity is there to go to. But where is reality headed? The objective reality and productivity of time forces the question to an issue. In answer to the question Professor Boodin develops a doctrine of teleological idealism. Direction is a metaphysical attribute, and consequently a sound basis for a faith philosophy.

In this brief notice of Professor's Boodin's book I have made no attempt at critical estimation. I am only calling attention to a noteworthy and well-nigh novel endeavor, that of writing a pragmatic metaphysics.

M. T. McClure.
Tulane University.

Experiments in Educational Psychology. Daniel Starch. Revised and Enlarged. New York: Macmillan Company. 1917. Pp. ix + 204.

The first edition of this book was published in 1911, and was re-

viewed in this JOURNAL.[1] "The chief changes in this edition consist in the addition of three short chapters, several tables of results for various tests, and a number of questions on the results of experiments."

The new chapters deal with the following topics: "Individual Differences in Abilities in School Subjects," which applies the general category of "individual differences" to school ratings; "The Distribution of Marks," which sets forth the principles of the theoretical distribution of students along a "normal probability curve"; and "The Coefficient of Correlation," which gives one of the methods of computing this coefficient (the "Pearson rank method"), and illustrates its application.

These additions help the book by attempting to relate its materials somewhat more closely to certain pertinent school conditions. There is, it is true, a typical academic fault in this new material. For example, in the chapter on the "Coefficient of Correlation," Pearson's formula is given *ad hoc*, with no suggestion as to its derivation. It seems simply an arbitrary mode imposed upon facts —as so much more non-intelligible material, to be used, although not understood.

Of course, no one would think of turning back the study of educational psychology to the old days of generalization upon uncontrolled experience. But as one finishes the average text in educational experimentation, it is with the feeling that the author conceives the child to be essentially a plastic nervous system, of varying degrees of impressionability, with varying degrees of resistance, persistence, and powers of renewal—all to be molded by the teacher into forms of habit which will be determined by the interplay between these "native characteristics" of the nervous system and the skill and determination of the teacher.

Such a conception is valuable, and has its place in the whole field. But it is only part of the story. Such a presentation of materials ought never to be used alone. Its place is in connection with a general analytic course in educational psychology. The whole world is striving, to-day, to find the basis of a more thoroughly social educational procedure. This involves the development of a child who shall be not merely *habit—i. e.*, properly molded nervous system—but also *thinker—i. e.*, self-directing personality. The proper development of adequate habit is an essential of this outcome: it is in the field of habit-building that most of the work in educational experimentation has its application. But this is but one aspect of the problem: habit is essential—as the basis, the mechanism. But

[1] Vol. IX, p. 246.

democracy demands that education shall go beyond habit-building. So democratic educational theory will demand that educational psychology shall go beyond the processes of habit-building. All of which means that such a manual as this furnishes excellent material for *one aspect* of the course in educational psychology—but not for the whole course.

As a brief manual for such use in connection with the general course in educational psychology, it is excellent. And the social common sense of the teacher should be sufficient to protect the student against the possible evils inherent in any manual of experiments.

JOSEPH K. HART.

REED COLLEGE.

JOURNALS AND NEW BOOKS

JOURNAL OF ABNORMAL PSYCHOLOGY, April–May, 1917. *A Study of the Anæsthesia, Convulsions, Vomiting, Visual Constriction, Erythema, and Itching of Mrs. V. G.* (pp. 1–24): EDWARD J. KEMPF.—The account of a patient at a state hospital for the insane is discussed. The conclusions drawn are in part that "Psychoneuroses are conditioned reflex activities and are pathological because the affections have become conditioned through experiences to react to stimuli that normally should have an indifferent influence." *Some Analyses in the Psychopathology of Every-day Life* (pp. 25–53): H. W. FRINK.—Several cases are mentioned where persons have forgotten words in speaking or writing and explanations are offered. *The Mental Imagery of Stutterers: An Examination of Certain Current Theories* (pp. 34–43): JOHN M. FLETCHER.—A review of some of the theories of stuttering is given with criticism against certain theories concerning the essential pathology of stuttering. No permanent peculiarities of imagery that would distinguish stutterers from normal persons exist. *The Stuttering Boy* (pp. 44–48): KNIGHT DUNLAP.—Few girls stutter. The fear of uttering his gutter-vocabulary in the hearing of his family may cause the boy to stutter. *The Deforming Influences of the Home* (pp. 49–57): HELEN WILLISTON BROWN.—Parents should be brought to consider their children as children of the world as well. *The Meaning of Psychoanalysis* (pp. 58–68): TRIGANT BURROW.—By specific psychoanalysis is meant that which is synonymous with Freud. *Reviews:* J. A. Green, Life and Work of Pestalozzi: ARNOLD L. GESELL; William Stern, The Psychological Methods of Testing Intelligence: ARNOLD L. GESELL; G. V. N. Dearborn, The Influence of Joy: MEYER SOLOMON: S. J. Holmes, Studies in Animal Behavior: ROBERT M. YERKES. *Books Received.*

REVUE PHILOSOPHIQUE, June, 1917. *Vie et fonctionnement* (pp. 497–523): F. LE DANTEC.—Every moment of life, studied from the mechanical, chemical, and colloidal levels, can be represented by the equation: $A_{n-1} + (A_{n-1} \times B_{n-1}) = A_n$, where A represents the total structure of a living being at a given moment, and B the sum-total of agents, of whatever level, which concur at the given moment in the determination of the total attitude of A, and $A \times B$ the interaction of the two. *Du fondement des jugements esthétiques* (pp. 524–546): E. GILSON.—"The relativity of works of art can be admitted without admitting their equivalence provided that one recognizes at the same time a psychical hierarchy of human beings." *La conception de la religion chez Renan* (pp. 547–572): R. LENOIR.—Midway in Renan's investigations philology becomes literary criticism, the study of the origin of religions is transformed into a philosophical theory of religion, and Christianity becomes the type of religion. In place of Christian spiritualism and of the conclusions of his study of religions, Renan comes to substitute a moral and metaphysical idealism. *Revue Critique.* René Worms, *Natalité et régime successoral:* GASTON RICHARD. *Analyses et Comptes rendues.* E. Boirac, *L'Avenir des sciences psychiques:* L. DUGAS. *Revue des Périodiques.*

Bosanquet, Bernard. Social and International Ideals. London: Macmillan and Company. 1917. Pp. lx + 325.

NOTES AND NEWS

ETHICS AND INTERNATIONAL RELATIONS

BY arrangement with Professor Tufts, my part in the discussion on "Ethics and International Relations" at the December meeting of the Association will be to discuss "whether the idea of sovereignty is incompatible with the acknowledgment of moral obligation by states." On this question I would submit the following theses:

1. The application of a moral code to any group of beings presupposes a kind of equality. The kind of equality required is compatible with differences of size, wealth, population, intelligence, *etc.:* it concerns only responsibility, namely, a power to appreciate the good at stake, an equal concern in that good, a power to act for or against it, and an acknowledged liberty to do so without interference by others.

2. The idea of sovereignty, so far from being incompatible with

moral obligation, indicates the kind of equality among sovereign states which alone makes obligation applicable.[1]

Sovereignty does not mean emancipation from moral requirement. The independence implied in sovereignty, namely, finality of decision on the part of supreme courts, legislatures, chief executives, and foreign offices, is analogous to the independence implied in maturity, not to the independence implied in the "state of nature." In passing from the condition of part-sovereign state to that of sovereign state, a state ceases to be an international ward, and becomes an international citizen, with rights and duties now capable of fairly definite formulation.

3. But there are elements in the situation between sovereign states which have no analogue in the situation between human individuals, so that the principles applicable to the one are not forthwith applicable to the other. In the main, they are these:

a. The being of an individual may be regarded as biologically established; the being of a state is never finally established. Hence a whole group of unique questions which are for states questions of existence. In fact, for the state, every change of property or of prestige is a change of being; hence in every such change, its existence is at stake.

b. The irregularities of geography, history, race, and cultural complex make the entity of every state unique, and its historical task unique, in a manner not paralleled among human individuals of a given state. The general and uniform obligation to "fulfil its mission" would carry with it in each case a set of wholly unique duties. The morality of general rules and precedents, or the morality of "universalizing the maxim" [*i. e.*, the maxim of any but the original purpose of fulfilling the unique historic task] fails to apply just in so far.

c. Each act of self-seeking on the part of states is an act of altruism to its members actual and unborn, in a manner without complete parallel in the moral relations of individuals to one another.

d. Since the *status quo* among states, in regard to extent and composition, is a matter of fact rather than a matter of justice, alterations of the *status quo,* whether by violence or otherwise, may conceivably establish a new status which in time would be at least equally acceptable. The disposition of new individuals to accept the *status quo* as a fact tends to obliterate in time the sense of moral injury.

4. Differences (*c*) and (*d*) are on the decline and as the body of

[1] As opposed, for example, to the conception of sovereignty set up for criticism by H. J. Laski in *The Problem of Sovereignty,* 1917.

international understanding increases, they tend to vanish. It may be said to be a primary international duty to banish them.

5. The success of a moral order among states depends on a general recognition of the remaining points of difference; any attempt to transfer bodily to inter-state affairs the ethics of individual life will but prolong the era of war.

6. There is, however, a permanent nucleus of common principles, which include (1) the subordination of the Darwinian struggle for survival among states to the development of a common body of international goods, and (2) the common obligation of all states to intervene by force in the maintenance of this rule and of these goods.

W. E. Hocking.

Harvard University.

At the meeting of the American Philosophical Association this month, the Committee on Discussion expects voluntary contributions on the two special topics of discussion. Those who wish to make such contributions are requested to notify the Secretary, Professor E. G. Spaulding, Princeton, New Jersey, as early as possible, preferably on or before December 10.

Dr. Charles Hughes Johnston, professor of secondary education in the University of Illinois, was killed in an automobile accident in September. Dr. Johnston was editor of two important books on the high school and as editor of *Educational Administration and Supervision* he exerted a stimulating influence upon progressive school men.

Professor Charles W. Cobb, associate professor of mathematics in Amherst College, has been granted leave of absence for one year to enter the aviation work of the government. He will hold a position in the Bureau of Instruction that supervises the teaching in the eight ground schools for aviators.

Dean James R. Angell, of the department of psychology at the University of Chicago, has been relieved from his university duties and has gone to Washington to work in the offices of the National Research Council.

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PSYCHOLOGY AND SCIENTIFIC METHODS

THE PRAGMATIC THEORY OF VALUE: A REPLY TO HERBERT W. SCHNEIDER

"THE problem of values," writes Mr. Herbert W. Schneider in his recent article in this JOURNAL,[1] "has been in the front rank of the battle line so persistently in recent years that it may seem desirable to let it rest in peace for a while." I am not sure that this does not apply with special force to the present writer. Nevertheless, some reply to Mr. Schneider seems almost demanded of me. For he identifies my name with the "psychological approach," bracketing it with Meinong and Ehrenfels, who, even if they cared to, obviously could not reply at the present time.

The thanks of all of us are due Mr. Schneider for his contribution toward an understanding of the larger issues. My own feeling of obligation is genuine even if accompanied by certain reservations. I feel bound, for one thing, to protest against his identification of my own work exclusively with the "psychological approach." I do this with the less hesitation, however, for the reason that in this matter he has, I think, misunderstood the others as well. To Meinong, for example, a *Gegenstandstheorie* of values is as much a *desideratum* as a psychological theory. In general those of us who have employed a "psychological and positivistic" method have also been fully conscious of what we have agreed to call the *axiological* problem, and in no case has psychology meant *Psychologismus*. As for myself, the characterization is sufficiently disproved by my own book, with its emphasis upon the two problems and methods of value theory, to say nothing of more recent work in which the objective study of value has been wholly in the ascendancy.

I mention these facts largely because Mr. Schneider's misunderstanding at this point has, to a degree at least, colored his whole discussion. Over against the psychological and positivistic approach he sets the "absolutistic and idealistic," as though the two were wholly incompatible. Both of these suffer from—he does not use the phrase, but the implications are plain—a "vicious abstraction-

[1] Vol. XIV., p. 141.

ism." But "there has been developing," he holds, "a new approach to the theory of value and it demonstrates the fact that the two methods of Münsterberg and Urban are not the only two and complementary approaches." This new approach is that of pragmatic logic and functional psychology, and from its cardinal principle, the analysis of the "value situation" itself, he expects great things. "By refusing to separate the internal and external world by a stone wall, it is forced to deal neither with personal satisfactions nor with eternal absolutes."

Now I do not believe that this charge of vicious abstractionism can be justly applied to either of these methods. So far as the psychological approach is concerned, I do not find that any one of the three factors which, according to Mr. Schneider, an analysis of the value situation discloses (a valuable object, an organism or activity to which it is valuable, and an end or purpose for which it is valuable) is in any way slighted. If the psychological method fixes its eyes on the consciousness of value (and the organism and organic activities presupposed), it is merely that there are certain problems which can be solved only in that way. As economics has long since found, explanation of the acquirement and mutation of value on the part of objects is impossible without just this analysis of the psychological determinants of value. Abstraction there undoubtedly is, but it is not vicious, for it is wholly conscious, and no one who makes a proper use of it imagines for a moment that it is the whole of value theory. As for the charge that the psychological method is forced to deal only with personal satisfactions, how is this possible to one who has read either Ehrenfels's or my own discussions of collective and over-individual values?

On the other hand, it is just as difficult for me to see how the charge of vicious abstractionism applies to the "complementary" method. It does not necessarily neglect the total situation, "separate the internal from the external by a stone wall," or "deal solely with eternal absolutes." If it has its eye primarily on the *objects* of value, as Mr. Schneider charges, it is merely that the investigator must have his eye somewhere if he is to "get anywhere" at all. If he finds absolute values, it is certainly not because "his method forces him to deal solely with them," but because he finds them, so to speak, *embedded in* the total situation. I am not interested to defend specifically the conclusions of Münsterberg, with whom, unfortunately, the method is exclusively identified by Mr. Schneider. A certain schematism and abstraction I would not deny, as I have already indicated in a criticism of his *Philosophie der Werte* in this JOURNAL.[2] But I am interested to defend the general method.

[2] Vol. V., p. 523.

Over-emphasis of the valuable objects there may be at times, but how can it be claimed that there is "neglect of human wants and interests," when it is precisely the meaning of these interests and their systematic coordination, that are sought throughout; when, rightly or wrongly, is it held, not only that there are actually over-individual interests and values, but that it is these alone that give the individual interests meaning and validity? A charge of faulty analysis is possible, but surely not one of neglect of fact.

I find myself somewhat embarrassed in replying to Mr. Schneider's criticisms. To do so adequately seems to imply, on his part, not only an imperfect knowledge of the writers examined, but also a comprehension of the problems of value theory which leaves something to be desired. This embarrassment is considerably increased when I attempt to comment upon the positive side of his paper in which he celebrates the triumphs of the new method, the contributions of which he thinks are "significant and far-reaching."

Despite his criticism of the psychological method, he admits that, "as a scientific theory of human goods, it has scientific value and social significance." "It has served the cause of progress." It seems then all the more ungracious that I should feel bound to ask just where these contributions of the new method are to be found? I for one have got much stimulus and suggestion from Mr. Schneider's and other pragmatists' papers. But a new method which shall supersede one with admittedly definite scientific results to its credit, must show other credentials. It turns out that Mr. Schneider himself sees these contributions largely in the future. He has much to say about what we shall learn when we study values "at home" in the specific situation, of the gain in social progress when we have thrown off absolutism in ethics and value theory. But living in the future is a soft job, and the promissory method apparently used so successfully in social and educational reform, does not work so well in science and philosophy.

Surely Mr. Schneider would scarcely suggest that what he calls functional psychology has as yet contributed anything specific to the scientific study of values. He makes the charge, indeed, that the experimental study of valuations and value judgments has hitherto been largely vitiated by neglect of the specific situation, by trying to find "the things that are pleasing or displeasing, satisfying or unsatisfying, likable or unlikable, *just in general.*" "Genuine evaluations," he tells us, "are never made in general." But we are not told of any general laws of valuation that have resulted from the study of the specific situation. Perhaps because, as I am inclined to think, in the nature of the case none can be extracted

from it. Valuations may, indeed, not be *made* in general, but if there is to be any science of them, they must be *studied* in general. In any case, in this direction we have promise rather than performance.

In another direction, however, genuine contributions may conceivably be looked for. "Pragmatic logic" may make our thought clearer and more coherent on the fundamental problems of value theory. This is in fact Mr. Schneider's claim. A good part of his paper is devoted to showing how by the magic of the "total situation" the vexed problems of "definition" and "classification," of "subjectivity and objectivity," are all easily solved.

Here my embarrassment, which has been steadily increasing, almost reduces me to silence. In these fundamental matters it is all so much a matter of what we demand, and the demands of the pragmatists, taught as they are to remain "at home" in the specific situation, are so modest that, in comparison, some of us seem to be convicted of an exigency that is pedantic, to say the least. The thought, too, that, to secure the benefits of these contributions, we must exchange logic for "pragmatic logic," presents to some an almost insuperable barrier. Yet who of us would not gladly make such sacrifices if thereby we could secure Mr. Schneider's assurance that there *are no problems?*

For instance, there is his very simple definition of value as "a quality of an object by virtue of which it becomes a means to an end." If one could accept this, it would indeed end all the pother over the question whether value is a quality or relation, or whether ultimately it is definable at all. It would end it surely. But it would end it precisely at the point where for most of us the real problems of value theory begin. It would also force us to accept such impossible consequences as that existent things alone are values, and that "ends are not to be spoken of as values at all." Again, take the dispute over the "subjectivity and objectivity" of value. This is to be ended by saying: "Of course human values are relative to human desire, but that is no reason for despising them as merely subjective." "Of course human values are objective both in that they are *of objects* and in that they are controlling and guiding factors of human experience, but why should value be, therefore, an eternal quality of certain objects independently of the relation of these objects to practical situations?" "Of course." They are both. These are unimpeachable sentiments. In a sense I share them myself! But, as I have indicated elsewhere, instead of solving the problem, they merely state it.

I must allow what I have said elsewhere to stand as my amplifica-

tion of this point. To repeat it here would require space which I have no right to ask. My only object is to suggest why it is that many of us fear that little help is to be got in this direction also. I do wish, in conclusion, however, to call attention to one point at which to my mind the fundamental incoherence of the pragmatic value theory reaches its culmination, namely, in its discussion of the fundamental issue of "value and existence." When the pragmatist says, often in the same breath, existence is a value and value is an existent, is it not just because here, as elsewhere, he moves back and forth within the magic circle of the "specific situation" in which he finds himself desperately enclosed. It is this that gives rise to the paradox in the pragmatist's theory of the value judgment, which makes the "practical" judgment both creative and cognitive. It is this also that, if I may depart from my point for a moment, creates the "instability of pragmatism," making it now naturalistic and realistic, and again subjective and idealistic.[3] It is true that the pragmatists have said over and over again that such things as these do not disturb them. That is perhaps a matter of taste. But if so, they will surely be catholic enough to make room in their philosophical caravansary for those of us who have other logical desires.

I can not help feeling that the unfruitfulness and incoherence of pragmatism in the theoretical sphere are closely related to a similar impotence in the sphere of practise. In practical matters, to which I would not refer were it not that it is to these Mr. Schneider makes his constant appeal, the philosophy that defines value as merely means to ends, and insists that ends are not to be spoken of as values at all, has, for instance, its natural consequence in a theory of education that at bottom knows no intrinsic values, and in an attitude toward the present crisis in national and international politics, which consists in taking refuge in a wholly instrumental opportunism. If even within its own ranks there is murmuring and talk of the "twilight of idols," is it not perhaps merely because certain inherent weaknesses in its theory of values are now coming to the surface? And are they not due precisely to this obsession of the "specific situation," so perilously near to the "bondage to the passing moment"? The fear of abstraction may be the beginning of wisdom, but it is also the part of wisdom to get over that fear. The specific situation is a good point to start from, but it is fatal,

[3] Both this paradox and this instability have, by the way, been pointed out by Professor Perry. It is all the more curious that, playing upon a footnote in my article on the value judgment, he should associate my view with that of Professor Dewey, when, throughout the articles in which this discussion occurred, the essential and fundamental differences were constantly emphasized.

practically and theoretically, to remain sticking in it. Relevance to the passing moment has its value, but there are also situations, both practical and theoretical, where to be "resolutely irrelevant" is both a duty and a right.

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THE VALUES OF PRAGMATIC THEORY: A REJOINDER TO PROFESSOR URBAN

PROFESSOR URBAN has honored my article on "The Theory of Value"[1] by the foregoing reply and criticism. I am under genuine obligation to him not only for his valuable criticisms and comments, but also for giving me the opportunity of possibly clearing up some of the misleading points in that article. I welcome this opportunity all the more because recent discussions of the problem, especially those of Professor Urban, call for a reconsideration of several of the points brought out in my article. Unfortunately that article was written before Professor Urban's, Professor Dewey's, and Professor Perry's articles appeared, and hence could not profit by them. Many of the points brought out in my paper have been far more ably and thoroughly discussed in them, so that to revert to mine would seem unprofitable. But since Professor Urban's reply has raised a number of important questions, I shall attempt a discussion of some of them not merely on the basis of my own article, but of recent discussion in general.

Professor Urban's protest against being identified with the "structural psychology" approach to the problem of value is quite justified in view of his recent articles, which are of a quite different character from his "Valuation, its Nature and Laws." It is certainly true that in them "the objective study of value has been wholly in the ascendancy." My statement was, of course, based on his earlier writings, especially on his *Valuation*. But even so, I take it, Professor Urban protests, not only because he recognizes a *Gegenstandstheorie* as complementary to the psychological, but also because he has discussed the "axiological" problem and method as distinct from the psychological. To take the latter point first, the rigid separation of the two problems and methods seems to me to be good evidence for the very point which I tried to make, namely, that the psychological method of Professor Urban is structural; for it is only when a certain mental content, "affective-volitional meaning," feeling, *etc.*, is taken by itself as a description of "worth-experience"

[1] This JOURNAL, Vol. XIV., p. 141.

that the "axiological problem" arises in order to give this subjective analysis objective validity. Starting out with certain "mental facts" as descriptive of value, with feeling as the "worth-fundamental," or with the "consciousness of value," Professor Urban seeks to construct a psychological theory of value by analyzing these "psychical facts" and by formulating their laws. This sort of procedure, it seems to me, is evidently a structural psychology, despite Professor Urban's claim that it is "functional,"[2] for a genuine functional psychology knows nothing of "mental facts," "psychical facts," "content of consciousness,"[3] *etc.*, nor would it "fix its eyes on the consciousness of value" to solve any problem of *value* whatsoever. In other words, to think that describing how one happens to feel when eating a piece of pie has any significance for a theory of pie-value, or in general that a structural analysis of feeling *as such* throws any light whatsoever on the nature of value, is comparable to an attempt to construct a science of medicine on the basis of the miserable feelings of sick folks. But once having constructed a theory of value on the basis of supposed "psychical facts," the validity of such values immediately becomes a problem. Hence the necessity of an axiological method to establish a relation between these values and reality. The situation is quite analogous, as Professor Urban points out,[4] to the knowledge problem. Having defined knowledge in terms of structural mental elements, the psychologist needs a science of epistemology (analogous to axiology) to give a basis for validity of knowledge *ueberhaupt*, in general. My point here is simply this, that the axiological approach to the problem of values, far from being an adequate complement to the psychological approach of Professor Urban, is but one of its evil fruits, an evidence of its structural character.

The same is true of a *Gegenstandstheorie* in the sense in which it would be a desideratum. An objective analysis and a subjective analysis, each made independently of the other, and then set side by side or added together, will never give a functional theory of value, any more than an adequate theory of knowledge could be obtained by adding realism and idealism together. The situation is somewhat analogous to an analysis of the function of digestion which would consist in an analysis of the structure of the digestive system and an analysis of vegetables, meats, *etc.* The really vital factor, namely, digestion, is left out altogether. On the one hand, there would be a tragic attempt to discover food as an intrinsic

[2] *Valuation*, p. 13.
[3] *Ibid.*, pp. 13–15.
[4] *Ibid.*, p. 16.

quality of vegetables and meats and on the other, a "positing" of food as a "necessary presupposition" of the digestive system, but lacking objective validity. Value like food is a functional term, and an adequate theory of value must be an organic analysis of the value-function. So that, while there may be a reference to all of the factors of the value situation in Professor Urban's, or even Münsterberg's theory of value, the factors are nevertheless not studied *as factors* in a situation, but as abstracted from it. In other words, the one method "fixes its eyes on the consciousness of value," the other "has its eye primarily on the objects of value," but neither has its eyes on the value situation. The result is, to carry out the figure, a cross-eyed effect instead of clear vision.

I have called value a function here. Had I realized when I wrote my article that the term "quality" was still so equivocal, I might have used "function" instead, though I doubt whether this term is less misleading, since it is so fashionable. However, what I wanted to emphasize is that value is a name for the functioning of objects in certain situations and in a certain way. An object functioning in an incomplete, indeterminate situation as a completing, determining factor is a value.[5] Objects always function specifically, not in general. The instrumental function of objects is and must be specific, from the very nature of function. Hence a functional value theory must take values specifically, relative to their situations.

This is, of course, contradictory to Professor Urban's statement that "an ultimate definition of value is concerned only with intrinsic value, all extrinsic or instrumental values going back ultimately to concepts of intrinsic value."[6] "For to say that the furthering of a tendency is to that tendency a good is to imply that furthering or fulfilment is in itself a good."[7] If this is so, I suppose it might follow that value is to be conceived as an ultimate continuum or "form of objectivity." But is this so? Does the judgment that *X* is good for *Y* imply that *X* is *in itself* a good? Certainly not, it seems to me. And that the concept of intrinsic value is not back of that of instrumental value can be shown, I think, by a reference to Professor Urban's own work. I quote:[8] "The same objects, let us say diamonds, may have little worth or indeed be distasteful to me personally, although in another attitude I may ascribe great value to them and, indeed, think of them as intrinsically valuable. My friend's action may be sanctioned by me in immediate apprecia-

[5] *Cf. Dewey*, "The Logic of Judgments of Practise," in *Essays in Experimental Logic.*

[6] This JOURNAL, Vol. XIII., p. 452.

[7] *Ibid.*, p. 454.

[8] *Valuation*, p. 22.

tion, although from an objective, moral point of view I must needs condemn it. Such contradictions can only be resolved by a distinction between subjective and objective values. Closely connected with this equivocation is that which arises when the distinction between intrinsic and instrumental values is ignored. An object which is worthless, or indeed the object of negative worth judgments of harmful or bad, may acquire the worth predicate when it becomes instrumental to some object of immediate and intrinsic value. Similarly, within the sphere of instrumental values or utilities of economics, we find an equivocation which can be removed only by the use of the distinction between subjective and objective. On the one hand, if anything is of worth because it is utilizable, it is always so for a subject and with reference to concrete conditions. But on the other hand, we are led to ascribe value to an object, for instance when we say that iron has value, irrespective of its relation to an individual subject and to concrete conditions; by a process of abstraction we give the object value in itself." Here, it seems to me, the relative instrumental character of values appears as primary, and intrinsic value serves merely to usher in the distinction between subjective and objective, which is, of course, a very vital distinction for Professor Urban's whole scheme. On the pretext of the "equivocal" character of relative value, and by a process of abstraction he gratuitously gives the object "value in itself." By this procedure values become *"functions of the relation between subject and object."*[9] He continues: "When we speak of an object as having absolute or objective value, it is only by a process of temporary abstraction from the subject in some specific attitude, not from the subject itself." Now this I would call "vicious abstractionism." "The actual value," continues Professor Urban, "is always the meaning of the object for a subject in some attitude—never an attribute of the object itself. The imputed value added to the actual value arises from attitudes of the subject, negligible or irrelevant from the standpoint from which the actual value is determined." Such "imputed value" is indeed an imputation, in the derogatory sense of the term. That the actual value is always a meaning of the object for a subject in some attitude (disregarding for the moment the subjectivistic implications of the statement and giving it an objective interpretation) is a plain matter of fact; and all that needs to be done is to discover *what* meaning in *what* attitude, or in other words to analyze the value situation, in some such way as I attempted in my article, or as Professor Dewey did in a more successful and thorough way in his articles. There is nothing

[9] *Ibid.*, p. 25.

equivocal about instrumental values as such. Equivocation arises from faulty or incomplete valuation, and does not call for a distinction between objective or intrinsic and subjective value, but merely for clearer understanding or knowledge of the actual meaning or function of the object in that situation. Hence, I say, the abstraction of value from a specific situation is vicious, and the admission that it is "wholly conscious" makes it all the more vicious. If valuations are not made in general, how can they be fruitfully studied as if they were. To quote Professor Urban's reply: "Valuations may, indeed, not be *made* in general, but if there is to be any science of them, they must be *studied* in general." This seems to me a vicious scientific, or better, unscientific, doctrine. A man might as well argue that one must study hydrogen and oxygen "in abstraction" in order to make a scientific study of water. Just as water ceases to be water when it is decomposed, so an object ceases to be a value when abstracted from the situation in which it functions.

But Professor Urban is, of course, quite right when he says that science abstracts its data; and such a genuine scientific abstraction is "the value situation." Situations do not exist isolated in experience, but fused, one within another or one overlapping another. Objects are usually members of numerous situations. But intelligent valuation is possible, science of any sort is possible only when these entangled situations are "abstracted," or better, "extracted." In other words, "equivocation" is the result of *not* considering value in its specific relations, of carrying the confusion of immediate experience into scientific analysis. This sort of scientific abstraction is not vicious since it does no violence to facts, but merely selects the relevant and rejects the irrelevant.

So much for the chief point raised by Professor Urban's reply, the charge of "vicious abstractionism." But the foregoing has, I think, also suggested several others which should be mentioned, though limited space makes a critical discussion of them impossible. The first is the distinction between objective and subjective values. It follows from what has been said that value can not be regarded as a "function of the relation of subject to object," as Professor Urban would have it. I tried to show that the distinction has been imported into the value problem in order to fit it into an epistemological scheme. There are no such things as objective or intrinsic values which act as norms or standards of validity over purely subjective values. The specific, relative character of value makes it neither subjective nor objective, but simply, as Professor Dewey says,[10] practical. We may, however, speak of subjective and objec-

[10] *Essays in Experimental Logic*, p. 364.

tive values in a social and moral, not in a logical sense. Situations vary in scope, and the same object often has to be evaluated with reference to several situations, some more inclusive than others. The narrower situation might be spoken of as subjective or subordinate to the broader. But it is to be noted that the distinction is not made *within* a valuation, but between value situations. The *logical* validity of a valuation is determined within the situation, but the social significance is determined by relations between situations.

It may be merely confusing to use the subjective-objective distinction in this way, and I would not have introduced it here were it not for the fact that it may throw some light on the problem of individual *versus* over-individual values raised in his reply. In accusing the psychological approach of Professor Urban of dealing only with "personal satisfactions," I was quoting Münsterberg rather than giving my own opinion. It is true that the structural psychologists have dealt with over-individual values, but nevertheless the *basis* of these is conceived of as "the impersonal attitudes" or what is more generally known as the moral sentiments of *individuals*. Since valuation is conceived of as "a continuous, progressive and systematic determination of the stream of conation and feeling in the individual's mind,"[11] any over-individual values which may be discovered are due to a social, objective reference of this "stream in the individual's mind," rather than to the objective, social situation. So there is a good deal of truth in Münsterberg's charge that this psychology is subjectivistic and concerned only with individual satisfactions. The analysis of the value situation here defended does not need to refer over-individual values to their supposed basis in individual feeling, nor, on the other hand, need it refer the individual values to the over-individual values to give them validity. Social values are discovered simply in objective social situations, which bear a moral relation to more restricted ("subjective") situations, but they are of no significance in determining the *validity* of any value whatsoever.

Another implication of the instrumentalist position is its bearing on the relation of value to existence, which Professor Urban mentions in his reply as "the point at which the fundamental incoherence of the pragmatic value theory reaches its culmination." It must be quite evident that for a functional theory the problem of value *versus* reality *in general* simply does not exist, since it is the fruit of a "vicious abstractionism." We may ask of any particular value whether it is real or not—that is precisely the business of evaluation; but the relation of value in general to existence in general is a meaningless problem. Values are natural facts or existences,

[11] *Valuation*, p. 15.

but that raises no intelligible problem. The statement that "existence is a value and value is an existent," which Professor Urban attributes to pragmatists, is, it seems to me, pragmatically quite meaningless, and I have been unable to locate it in pragmatic literature. Furthermore, what has such a statement to do with "the magic circle of the specific situation"? Or again, what is the connection between the bondage of the specific situation and the "paradox" of a practical judgment both creative and cognitive, the "instability of pragmatism," *etc.*?

In my paper I was aiming not so much at a value theory which would fit into the general pragmatic philosophy, but rather at a discussion of the problem of value on its own merits and in its own terms. And while I recognized the contributions of instrumental logic and functional psychology to the problem, I did not care to identify the analysis explicitly with pragmatism or with any -ism, since it seems to me that we shall make better progress if we approach the problem in the spirit of cooperative inquiry, rather than by bringing into it all the rivalries and "caravansaries" of current philosophies. However, since Professor Urban has identified my paper with the pragmatic attitude, and probably justly so, and has made his reply the occasion of a criticism of pragmatism in general, it would seem my duty to attempt a few words in defense of pragmatism; though, as I said, I would prefer to have the analysis of the article stand or fall on its own merits, rather than on the merits of pragmatism as a philosophy.

"Surely," says Professor Urban, "Mr. Schneider would scarcely suggest that what he calls functional psychology has as yet contributed anything specific to the scientific study of values." And yet that is precisely what I wish to suggest, and as evidence that this is not merely presumptuous on my part, I suggest several such contributions. (1) A genuine *re*consideration of the problem and an exposure of the barrenness of the old analysis. (2) The conception that values are specific, and can not be studied abstracted from their situations, any more than life can be studied in a corpse. (3) A tentative analysis of the value situation, the outstanding contribution in this respect being Professor Dewey's *Essays on Judgments of Practise.* (4) The correlation of intelligence and evaluation, a critique of the metaphysical and theological separation of a world of fact and a world of value, of judgments of fact and judgments of value. These contributions, I should say, represent some of the chief products of the "functional" approach. Whether or not they are adequately proven is of course a matter of doubt and difference of opinion, but certainly if they were accepted, they would quite

revolutionize the aspect of the value problem. From a positive standpoint they may not loom very large, but from the standpoint of current theory they seem to me very significant. I would even suggest that they would have far-reaching consequences for Professor Urban's own theory. Too much is not to be expected of pragmatic theory at present, since it is still forced to be largely polemic in character. But despite this unfortunate condition and despite its infancy, it has created an intellectual ferment, even with regard to value theory, which is quite unparalleled in recent times. Certainly the implication that no general laws have resulted from the study of the specific situation "because from the nature of the case none can be extracted from it" is not only false, but quite absurd, for the law, for instance, that value is the instrumental functioning of objects in specific situations is quite as general and abstract as any you please.

Then there is a second indictment against pragmatism made by Professor Urban, namely, that pragmatism pretends to solve by a mere sleight of hand all the most perplexing problems not only of value theory, but of life in general. "In these fundamental matters it is all so much a matter of what we demand." That my little article only scratched the surface of the problem of values I am fully aware. But that I, or even pragmatism in general, regard this as a panacea and am quite willing to let it go at that, lest it scratch too deep, is radically to misunderstand the temper of the pragmatic attitude. Pragmatism means a redirection of philosophic inquiry into genuine problems, and the reason it refuses to enter into such problems as subjectivity *versus* objectivity of values, value and reality, classification of values, *etc.*, is because it finds these problems misleading and not genuine; and far from resting in quiet self-complacency it endeavors to restate the problems of value in scientific terms and to show in what directions scientific inquiry must proceed. Pragmatism marks not the end of value theory, but a fresh beginning.

Another implication which comes out in Professor Urban's reply and in much current criticism of instrumentalism is that the "specific situation" is an intellectual shackle, "a magic circle," a "bondage to the passing moment," implying an impotent "opportunism," "instability," lack of foresight, *etc.* Just why this attitude is so prevalent is not easy to understand. I imagine the word "specific" has something to do with it—"specific situation" being interpreted to mean limited, narrow situation. Had not current thought reveled so in "the general," the *Ueberhaupt*, the absolute, it might have been better simply to say "situation." For the ex-

pression "specific situation" is evidently a redundant expression. A situation can be nothing but specific. But as I have already pointed out situations vary in scope; they may be matters of an instant or of centuries, of only individual concern or of world-wide significance. But one is just as specific as another. The moral problem is precisely the problem of making valuations with respect to these larger, broader situations. But this moral interest should not be allowed to confuse the analysis of valuation and value as such. So I should like to suggest that the "instability" of pragmatism and many of its other faults and "paradoxes" have no relation to this offensive "specific situation," but are due to the fact that the various rival types of philosophy naturally interpret pragmatism according to their own philosophical predilections. This would at least account for its being "now naturalistic and realistic and again subjective and idealistic." Of course the varied interests and philosophical backgrounds of the pragmatists themselves have something to do with it.

The charge that pragmatism is unfruitful in practise as well as in theory is pragmatically a severe charge; but it seems to me to be quite without foundation. The fear that pragmatism will become a "political opportunism," that it is "in the bondage of the passing moment," that it lacks foresight, that since it knows only relative or relevant values it knows no genuine values at all, is born, I think, of this misinterpretation of the "specific situation." Certainly the facts of the case seem not to support the charge. For it is precisely pragmatism's keen interest in establishing creative intelligence and foresight in our social life, and its claim to being a *re*directive force, a practical philosophy, that is its distinguishing trait. And the severe test which the present crisis has put upon philosophy seems to bear out this claim by demonstrating the value of the pragmatic attitude. Those intellectual activities which are now genuinely constructive forces, such as the group of liberals known as "realists in politics" and represented by such organs as *The New Republic,* are inspired by the pragmatic philosophy; not exclusively, of course, by the group of philosophers known as pragmatists, but by the temper of mind for which their philosophy stands. And if philosophy is to make for intelligent social reconstruction, it can never do it by remaining "resolutely irrelevant." In fact, the present situation reveals quite clearly, it seems to me, that those who in politics and morals persist in being "resolutely irrelevant" are a social nuisance and irritant rather than a potent, redirective force.

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REVIEWS AND ABSTRACTS OF LITERATURE

Mechanisms of Character Formation. WILLIAM A. WHITE. New York: The Macmillan Company. 1916. Pp. ii + 342.

We are indebted to a distinguished psychiatrist for this interesting book, the first comprehensive exposition of Freudianism from the pen of an American. The work bears the subtitle *An Introduction to Psychoanalysis*, and in the preface the writer states that, following Sigmund Freud, the "real creator" of the new psychology, he will attempt "to lay down the broad principles which underlie human behavior." Apparently the writer's theme waxes more ambitious as he proceeds, for in the concluding chapter he writes: "I have tried to draw a picture of man that gave him his placement in the scheme of things and did not endeavor to separate him from other living beings nor from the forces of nature in general. In other words, I have tried to show that he was only one of the multitudinous manifestations of life and even that the general laws of energy, as they apply in the inorganic world, are also applicable here" (p. 330). In reality what the writer has given us, therefore, is a rather crude and sketchy philosophy of energy from the standpoint of Freudian psychology. The inference lies close to hand that the philosophy of the book is an outgrowth of the notion of energy so prominent in the *Affekttheorien* of both Freud and the Zurich school.

The reviewer finds it difficult to give a critical estimate of this book, though he has read it with interest and profit. This is due in part to the writer's failure to draw any sharp line of demarcation between matters of fact and philosophical speculation or poetical fancy; the book abounds in fanciful, though often interesting analogies, and in sweeping philosophical generalizations. Another difficulty is offered by the matter of the book itself. Apparently it is the work of a medical specialist who finds in Freudianism a convenient instrument for cementing into something like a system the results of wide reading and catholicity of interests. The facts of comparative, individual, and abnormal psychology, physiology and neurology, anthropology, comparative mythology, the physical sciences as well as philosophy and art are laid under tribute for material wherewith to illustrate the Freudian theses. Back of this more or less heterogeneous material and serving to give it a quasi-metaphysical unity is the notion of a creative energy or *libido*, conceived now in terms of Nietzsche's "will to power" (p. 190), now in terms of Bergson's *élan vital* (p. 42). This unfolding *libido* gives rise to conflict (Ch. IV.), "the very root and source of life" (p. 63). Con-

sciousness arises out of the necessity for resolving this conflict, and the unconscious (Ch. III.) which far surpasses the conscious both in content and importance, is the result of the accumulations of the past experience of the psyche, phylogenetic as well as individual. The unconscious is composed of submerged wishes or tendencies that oppose efforts at adjustment (p. 120). The *libido,* as found in these submerged wishes of the unconscious life, appears only in the form of symbols (Ch. V.), the real meaning of which is veiled. It is in the dream-life (Ch. VI.) that the mechanism of the unconscious phase of the psyche can best be studied, for the dream is " a wish-fulfilling dramatization " (p. 142).

In a curious chapter on " the family romance " the writer describes the efforts of the *libido* in the individual to make the transition from " infantile attachments to adulthood " (p. 148). Much in this, as well as the two succeeding chapters on the " will to power," is purely fanciful. We are told, for example, that at birth the child is thrust from a " state of comfortable and unconditioned omnipotence "; its first cry is an " expression of a desire to return to the uterus" (p. 178). Incest, therefore, in the adult is but an expression of this primordial infantile sexual impulse (*sic*) to return to the state of " comfortable and unconditioned omnipotence " (p. 155), whatever that may mean. Much suggestive material is contained in the chapters on extroversion and introversion, organ inferiority and resolution of the conflict.

On the whole, Dr. White's book shows wide learning and offers much interesting material, but lacks logical coherence and exactness of terminology and is marred occasionally by slovenly English (pp. 15, 40, 91, 152). In spite of its subtitle, *An Introduction to Psychoanalysis,* it hardly meets that need as successfully as Hitschmann's *Freud's Theories of the Neuroses,* recently made accessible to English readers;[1] neither does it possess the incisiveness and clarity of Professor Holt's brilliant little book, *The Freudian Wish.* The value of Dr. White's contribution lies rather in the light it throws upon the many affiliations of Freudianism with contemporary thought and especially with philosophy. For the chief attraction of the book is the note of broad and sympathetic humanism running through it, born, doubtless, of the intimate acquaintance with the hopes and fears, the darling ambitions, the passionate loyalties, and the pathetic illusions of human hearts enjoyed only by the priest or the physician.

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[1] Moffatt, Yard, and Company, New York, 1917.

A Primer of Logic. HENRY BRADFORD SMITH. Pulaski, Va. H. D. Smith and Brothers. 1917.

Mr. Smith's "primer" is an instance of the application of a modern and rigorous method to the old problem of the formal treatment of the syllogism, immediate inference, and sorites. The theory is developed without reference to application and with regard only for the formal properties of the elements with which it deals. If the theorems of logic represent the rules for demonstration in science (which might condemn the logician to humble observation of the scientist at work) this book is concerned rather with the logic of logic itself. In it the Aristotelian logic is treated as a special case of a more general logic and is distinguished by special postulates as the geometry of Euclid is distinguished from the non-Euclidean geometries.

In the formal solution the four orthodox categorical forms, (1) All *a* is *b*, (2) No *a* is *b*, (3) Some *a* is *b*, (4) Some *a* is not *b* are replaced by four forms in which the predicate is quantified, *viz.*, (1) All *a* is all *b*, (2) Some *a* is some *b*, (3) All *a* is some *b*, (4) No *a* is *b*. Among these forms are established three relations: "worse than," "doubly worse than," "trebly worse than," after the fashion of Sir William Hamilton's "better" and "worse" relations. By means of these relations, which are defined by their use in a complete exposition of the true and false propositions into which they enter, the author makes it possible to express symbolically the rules for the deduction of the moods of immediate inference and syllogism.

The presentation of the theory has been made pedagogical rather than methodical and much of the theory is developed in the groups of exercises following each chapter. This has led in one case to an apparent ambiguity. It is not clear (p. 19) whether the "worse" relation is established by definition or postulate.

An appendix contains a very satisfactory discussion of method and a full account of the relations between the classical logic and the special categorical forms that are treated in the text.

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JOURNALS AND NEW BOOKS

MIND. April, 1917. *The Meaning of "The Universe"* (I): C. E. HOOPER.—Defines the universe as "the totality of real thought-objects, considered under the four related aspects, namely, Space, Time, Natural Characters, and Natural Causation. Explains the

meaning of "thought-objects," "reality," "aspects," and then elaborates the four aspects of the universe. *Moral Sense, Moral Reason and Moral Sentiment* (pp. 146–161): E. W. HIRST.—An examination of recent discussion regarding the psychology of conscience with special reference to the moral sense views of Hutcheson and Shaftesbury, and the moral reason doctrine of Dr. Hastings Rashdall. The truth lies neither in emotion nor in intelligence alone, but along the lines of the mind's natural development. Such lines are drawn following the analysis of sentiments given by A. F. Shand. *Lotze, Bradley, and Bosanquet* (pp. 162–170): AGNES CUMING.—An account of Lotze's treatment of the position and function of thought with respect to the criterion of truth and the dualism of sense and thought, and a comparison of them with the positions of Bradley and Bosanquet. The latter inherit their problem from Lotze, but, it is maintained, the dualism in Lotze represents a false abstraction, hence the subsequent procedure is artificial. *Schopenhauer and Individuality* (pp. 171–187): BERTRAM M. LAING.—A brief exposition of Schopenhauer's theory of knowledge, his metaphysics, and his ethical doctrines, showing to what extent he fails to do justice to individuality, followed by a criticism of his philosophical attitude with a view to correcting this injustice. *Discussions: Causality and Implication:* B. BOSANQUET. *Universals and A Fortiori Reasoning:* W. A. PICKARD-CAMBRIDGE. *De Propositionum aut Iudiciorum Problemate:* H. P. COOKE. Critical Notes: John Dewey, *Essays on Experimental Logic:* A. SIDGWICK. G. Santayana, *Egotism in German Philosophy:* F. C. S. SCHILLER. Augustus de Morgan, *A Bundle of Paradoxes:* C. D. BROAD. *New Books. Philosophical Periodicals. Notes and News.*

Carr, H. Wildon. The Philosophy of Benedetto Croce: the Problem of Art and History. London: Macmillan and Company. 1917.

Coffey, P. Epistemology or the Theory of Knowledge. London: Longmans, Green and Company. 1917. Pp. xiv + 374; viii + 376.

Croce, Benedetto. Logic as the Science of Pure Concept. Tr. by Douglas Ainslie. London: Macmillan and Company. 1917.

Whitehead, A. N. The Organisation of Thought. London: Williams and Norgate. 1917. Pp. vii + 228.

NOTES AND NEWS

Philosophical Discussion and the American Philosophical Association

Professor Lovejoy has sent to this Journal a comment on Professor Creighton's note concerning the programmes of the Association's meetings, published on page 472 of this volume. On account of the late date of the receipt of Professor Lovejoy's letter we are unable to print it in its entirety in advance of the meeting for 1917. Since, however, the question of a plan for future discussions is to come up for consideration at this meeting, we excerpt Professor Lovejoy's summary of the plan which he regards as best adapted to promote interesting and effective discussions and fruitful co-operation in philosophical inquiry:

1. A subject for discussion, and three or four leaders, should be selected and announced by the Executive Committee not later than March 1 of each year—the subject to be stated in the form of a restricted and, so far as possible, unambiguous *question*. No definitions or analyses should be proposed by the Executive Committee.

2. The leaders should communicate with one another as soon as possible after appointment, and hold at least one conference (expenses to be paid by the Association) and attempt thereby:

(*a*) to decide what terms involved in the subject (if any) require special definition in order to avoid confusion and equivocality in the discussion;

(*b*) to agree, if possible, upon a common usage of these terms in their own contributions to the discussion—or, if this is impossible, to state explicitly each his own definition;

(*c*) to formulate any principles or presuppositions, relevant to the subject; upon which they are in agreement;

(*d*) to formulate, if possible, the questions about which they do not agree, but which they agree in regarding as *crucial* for the settlement of the main question under discussion;

(*e*) to state briefly the theses, with respect to the questions just mentioned, which they severally intend to maintain.

3. The results of these preliminary discussions of the leaders *inter se* should be published not later than July 1.

4. Each leader should publish, or distribute to all members, at some time between July 1 and the date of the annual meeting, an article (or articles) setting forth fully his arguments for the theses which he maintains—these articles to attempt in all cases to join issue in some definite manner with the contentions and arguments of the other leaders.

5. Two sessions of the annual meeting should be devoted to the discussion of these articles and the issues raised by them, other members besides the leaders being asked to contribute papers.

6. Teachers and students of philosophy throughout the country should be asked each year to give some special attention in their courses or discussion clubs, during the fall term, to the subject proposed for discussion at the ensuing meeting of the Association.

7. A select bibliography of the subject for discussion should be published either by the leaders or the Executive Committee, as may prove more convenient.

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ETHICS AND INTERNATIONAL RELATIONS

IN the discussion of the topic, I propose to inquire how far ethics can apply to international relations and what kind of conceptions can obtain in a democratic international society.

Moral consciousness, organizing itself at first on the basis of relationships in small groups, has come to conceive both its values and its standards as universal and objective.

The sharp contrast between the ethical judgments pronounced by members of the opposing nations in the present war challenges the assumed universality and objectivity of the moral consciousness. Leading answers are:

1. No ethical judgment upon such national acts as the present was is appropriate. "International conflicts are not so much moral events as they are the clashing of social forces." (Warren, *International Journal of Ethics*, April, 1916.)

2. The ethical predicates appropriate to individuals are not applicable to nations or states. The state is itself the universal and transcendent aspect of man. Its safety is supreme law. (Rümelin, *Politics and the Moral Law.*)

3. Many at least of the ethical predicates have no applicability, for the state is the community organized for the single purpose, power. It would be a betrayal of trust to admit restriction upon this. (Treitschke, *Politics.*)

4. The conflict of standards is due to a difference in group moralities:

(*a*) In a dynastic state whose nature is to seek dominion, and in which dynastic and national loyalty are identified, a feudal morality finds in patriotism a sufficient ethical sanction. (Veblen, *Imperial Germany and the Industrial Revolution, The Nature of Peace.*) Bismarck apparently accepted this for himself, but thought it neces-

sary to justify war to the common people by making it appear defensive. The religious counterpart of this feudal attitude appears in the conception of the national God.

(*b*) The military ruling class has both by tradition and choice a *Herrenmoral*. It is not necessary to charge Nietzsche with bringing on the war, but he certainly thought he was advocating (1) a *Herrenmoral* and (2) a morality the reverse of the general morality of Christendom. A class which believes in its divine right to govern will naturally find such a *Herrenmoral* congenial. A nation which believes its *Kultur* superior will accept so much of a *Herrenmoral* as to make explicable collisions with codes of inferior culture.

(*c*) The conflict in standards is due to the opposing attitudes of those who already possess all that they need and those who are obliged to seek new opportunities for expanding population and needs for raw material. It is analogous to the difference between the morality of property owners and syndicalists.

(*d*) An idealism which rejects any empirical element or tests, if it has once come to find the content of its ideal in the state, does not shrink from any consequences and hence will be at variance with the ideals of those who consider consequences. (Dewey, *German Philosophy and Politics*.) Utilitarian philosophy can not appreciate the ethical ideal of the state. (Münsterberg.)

Elements of truth or half truth may be found in all these explanations. An ethics adequate for an international democratic society can not be the ethics of a ruling class; on the other hand, it can not be the ethics of vested rights to the exclusion of provision for growing needs. But it must separate sharply between economic needs which can and should be met through cooperation, and alleged needs of dominion. Nor can the ethical consciousness abdicate for any of the reasons offered in 1 and 2.

JAMES H. TUFTS.

UNIVERSITY OF CHICAGO.

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